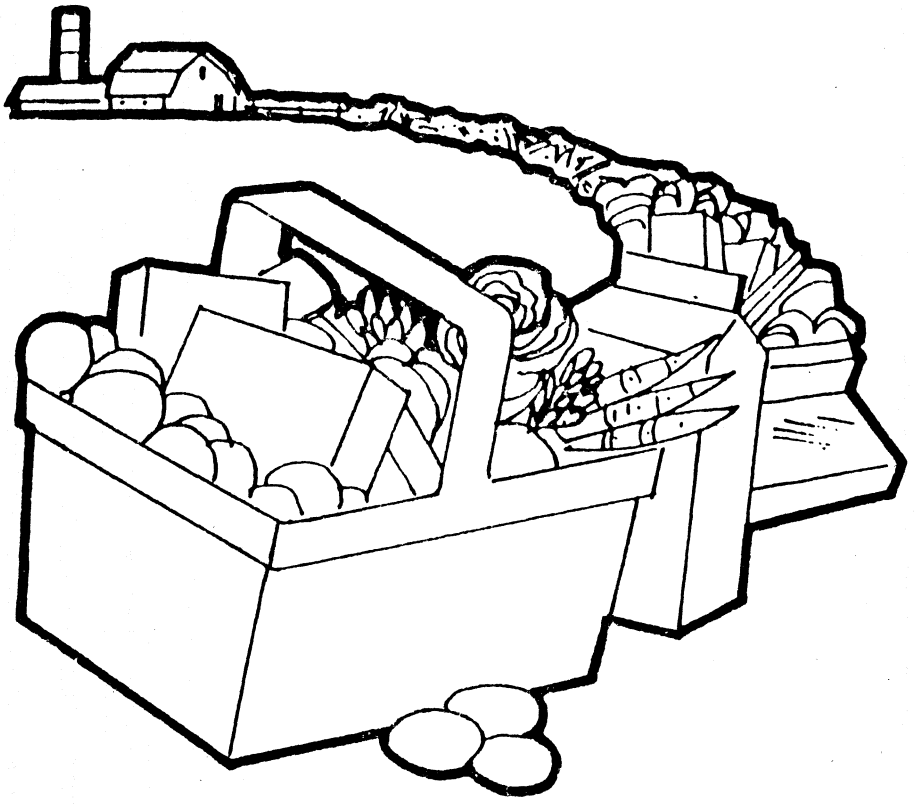
The Asian Market for Agricultural Products



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Luther Tweeten
Editor

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Trade Conference

Realizing Opportunities for Farm and Food Product Exports to the Pacific Rim

Conference Objectives:

Highlight opportunities for farm and food product exports to Asia
and
Show how to reach those markets

Presented by

Department of Agricultural Economics and Rural Sociology
College of Agriculture
The Ohio State University

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Luther Tweeten
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Introduction

U.S. domestic demand for farm output in expanding only 1 percent per year while supply (due to productivity gains alone) is expanding 1.5 percent per year. Without expansion of export markets, American farm and food firms face a stagnant or declining demand relative to supply. Asian Pacific Rim markets offer a happy combination of need and buying power, the latter backed by impressive rates of economic growth. Opportunity awaits, but American farm and food firms will need to play an active rather than passive role or the markets will go to our competitors.

The Asian Pacific Rim is America's largest and fastest growing agricultural export market. It includes but is by no means limited to our largest single agricultural export market, Japan. Relatively speaking, American farm and food firms are as successful at exporting to Japan as Japan's auto and electronics firms are at exporting to the United States.

The theme of this set of papers is that, despite past success in exporting, major new opportunities await American agricultural product exporters to the Asian Pacific Rim:

* *Norman Rask* highlights the broad scope of the Asian market. Although we properly give attention to currently large markets in Asia, Rask reminds us that Japan, Korea, and Taiwan which account for 30 percent of U.S. agricultural exports, accounts for only 6 percent of Asia's population! If China and India, for example, with high man-land ratios would make institutional reforms to promote more rapid economic growth and open markets, the trade potential of that 2 billion person market is staggering.

* *Dennis Henderson and James Dayton* identify numerous trade opportunities for high-value agricultural products. Unfortunately, the U.S. frequently has lagged behind competing exporters in realizing opportunities for such agricultural products.

* *John Nichols* summarizes an impressive list of studies documenting the high payoff from U.S. farm export promotion.

* *Maury Bredahl* articulates the perceptions, attitudes, and reality of institutions that facilitate and, too often, impede agricultural product trade. He shows that trade policies motivated by myth and serving narrow special interests cost developed and developing nations billions of dollars each year.

* *James Gleckler and Luther Tweeten* target a more narrow topic -- the potential benefits and costs of a U.S.-Japan free trade agreement. Economic benefits especially to Japan are massive.

* *Jong-Yong Kim* provides optimism that even seemingly inscrutable and intractable forces of agricultural protectionism are giving way. Few countries have benefited more from open world trade than Korea and it is coming to recognize that trade is a two-way street in which distortions have been blocking agricultural imports. He contends that roadblocks to agricultural exports to Korea are coming down as rapidly as the domestic political process will allow.

* *Joseph Cristo* provides one example of the many success stories of Ohio food processing firms expanding sales in Asian Pacific Rim markets.

U.S. Trade Patterns and Prospects for Asia: Bulk Commodities

Norman Rask[*]

Asia is the largest and most rapidly growing regional market for U.S. agricultural exports. It is a very dynamic region, especially in the Pacific Rim area, where the bulk of U.S. agricultural export markets are located. There is great diversity among Asian countries in level of development, rates of economic growth, freedom and openness of markets, agricultural production potential, and population size. The nature of individual country markets reflects this diversity. Among its countries, this region contains the largest individual U.S. agricultural market (Japan), rich and poor countries, large and small countries, some very rapidly growing countries, major market-distorting policies in a number of countries, and overall, a limited production response capability to meet the huge future food demands that will result from a large, growing, and increasingly affluent population.

My purpose in this paper is to put a number of these contrasts in perspective as they relate to current markets for U.S. agricultural exports and, perhaps more importantly, to future trade prospects. I begin with a general summary of the region.

Summary

A large U.S. market: Almost 50 percent of U.S. agricultural exports currently go to Asia. This percentage is increasing each year, while all other regional markets are stable or declining.

Large population base: With 58 percent of the world's population and a moderate population growth rate of 1.6 percent per year, there is substantial export growth potential.

Rapid economic growth: Rapid economic growth is especially noticeable among low- and middle-income Asian countries, particularly in the Pacific Rim region. Growth in income for such countries leads to diet changes that include more livestock products and induced increases in feed grain requirements.

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Limited land resources: Land resources, measured in arable land per capita, vary considerable by country but, overall, Asia has only one-half the world average and only one-sixth as much as North America. Arable land in China has actually declined five percent in the last 15 years due to land degradation and non-agricultural uses.

Policy distortions: In a number of important Asian markets, food and agricultural policies favor agricultural production, discourage food consumption, and thus limit agricultural imports. These distortions are sufficiently large to have limited U.S. export potential to the region substantially in recent years.

Policy changes: Fortunately, recent policy changes and promised future changes will begin to open more markets to U.S. exports and should improve agricultural trade to the region.

Growing U.S. markets: Several countries in the Pacific Rim with a combination of the above factors are important and rapidly growing markets for U.S. agricultural exports. In the Pacific Rim we find our first (Japan), third (South Korea), seventh (Taiwan), and eighth (China) largest agricultural export markets.

Large future potential: None of the Asian markets is approaching saturation. A large population, limited agricultural resources, positive policy changes, and rapid economic development from a relatively low development base all point to substantial market expansion potential in the years ahead.

U.S. Agricultural Exports

Over the past fifteen years, Asia has been the one bright spot for U.S. agricultural exports, rising from about 30 percent of U.S. exports in the mid 1970s to 47 percent in 1988. All other regions have either remained constant or declined. For example, Western Europe has declined from 35 percent to 18 percent. Exports to Latin America increased modestly during the late 1970s but have plateaued and declined marginally in the 1980s, primarily from hugh external debt problems and little or no economic growth. Exports to the Centrally Planned Economies of Eastern Europe and the USSR have fluctuated between 5 and 12 percent depending on weather. Africa has been a small market determined largely by aid of various forms (Figure 1).

Within Asia, the major export markets are in the Pacific Rim, where four countries account for one-third of all U.S. agricultural exports. Japan is our number one market and takes a growing 20 percent of U.S. agricultural exports. South Korea is our third most important market accounting for 6 percent of U.S. exports and Taiwan and China (numbers seven and eight) each account for 4 percent of U.S. exports (Table 1).

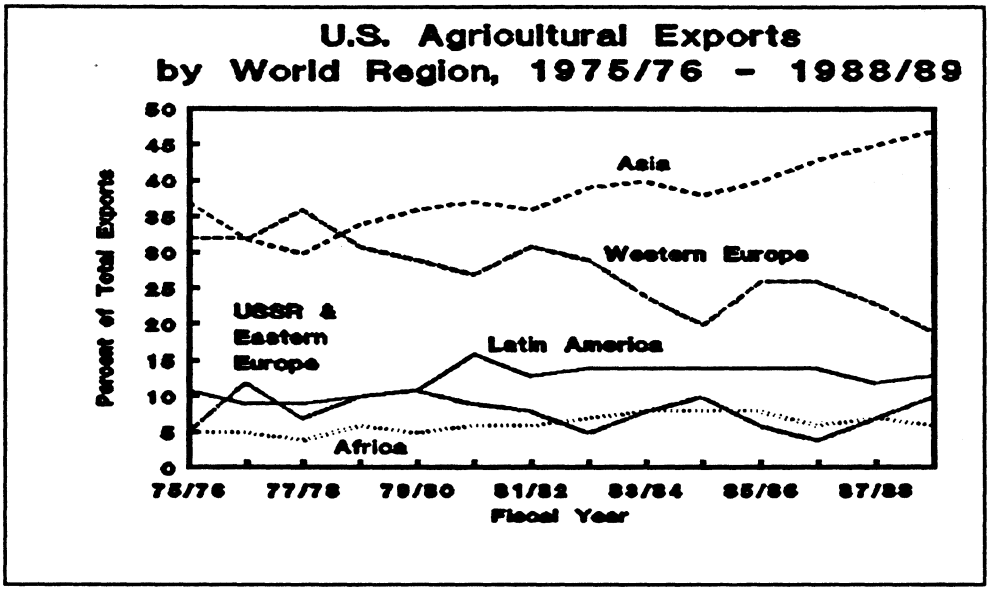

Figure 1.

Table 1. Major U.S. Export Markets, 1988-89.

Country	Billion Dollars	% Total
Asia	18.8	47
Japan	8.1	20
South Korea	2.5	6
Taiwan	1.6	4
China	1.5	4
Western Europe	7.4	18
Latin America	5.1	13
USSR	3.5	9
Africa	2.4	6

From a U.S. commodity export perspective, Asia is an average market for grains, taking about 48 percent of U.S. exports, compared to 47 percent of all commodities; a less than average market for soybeans and soybean products with only 36 percent of U.S. exports; and better than average market for livestock products at 55 percent of total U.S. livestock product exports. For beef and pork products, (82 and 71 percent), Asia is a dominate market, and within Asia almost all U.S. beef and pork exports go to Japan.

For reasons discussed below, exports of U.S. livestock products to the Japanese market are likely to increase in the future with similar but less dramatic increases possible in Taiwan and South Korea. Exports to China are likely to be concentrated more in the feed grain category.

From a country perspective, the U.S. provides about 80 percent of Japan's import needs for corn and soybeans, and 60 percent of wheat imports. For South Korea, the U.S. share is 50 percent for wheat, 80 percent for corn, and almost 100 percent for soybeans. Taiwan depends on the U.S. for 90 percent of its wheat and corn imports, and almost 100 percent of its soybean imports. For total agricultural imports, the U.S. share for Japan is 35 percent, for South Korea 48 percent, and for Taiwan 43 percent.

Determinates of Trade

A number of conditions affect the amount and specific composition of agricultural trade for a particular country. An important issue is whether a country is capable of being self-sufficient in food production. Beyond this, determinants of trade include the level and pace of economic development; specific agricultural, food, and trade policies; and agricultural resource endowment, including technology.

Basically, trade in agricultural products occurs when there is an imbalance between production and consumption. If production is greater than consumption, a country becomes a net exporter; if consumption is greater than production a country becomes a net importer. Countries will often change their import-export status at different levels of development. Of the two measures (consumption and production), consumption is the more dynamic and passes through distinct phases as countries develop. Consumption increases rapidly in early stages of development as increased incomes are used to upgrade diets to greater quantities of livestock products, and then plateaus at high income levels where income growth has little impact on consumption behavior. Production usually demonstrates a more predictable path of slow steady growth based on technological change. It lags behind consumption as economic and population growth expand with an economic takeoff. With technological transfer and buildup of internal scientific capacity, production growth can begin to catch up with population growth, reducing import growth. The process is speeded by production subsidies.

Consumption

The interactions of consumption and production trends for any particular country throughout the development process present a dynamic and changing trade picture. For example, with an average level of agricultural resource endowment, a country typically passes through three phases of food self-sufficiency as development progresses. At very low income levels, self-sufficiency is close to one since surplus foreign exchange is not available to purchase food imports. This is the case today for a number of poor countries of Asia, Africa, and Latin America. Food trade with these countries is very limited.

As development occurs and incomes rise, the demand for food increases more rapidly than increases in agricultural production. This is true even if agricultural growth is the primary source of the increased income. For example in Taiwan, with high agricultural growth rates of about 5 percent per year in the 1960-1980 period, food consumption grew much faster than production, moving Taiwan from being agriculturally self-sufficient in 1960 to importing one-third of its agricultural product needs by 1980. Thus, countries in this low and middle income stage, especially if they are growing rapidly, provide a very strong market potential. This is the case with South Korea, Taiwan, China, Hong Kong, Singapore, and a number of other countries, and is the reason that Asia is such a dynamic agricultural export market for the U.S. today.

At high levels of income, diet changes are satisfied, and income growth has little impact on consumption. However, production, driven by technological change, continues to increase and this can result eventually in positive levels of food self-sufficiency if sufficient agricultural resources exist. This will result in countries changing from net importers to net exports and thus, from markets to competitors. This is the case with many Western European countries today but, because of limited land resources, it is unlikely to happen to any great extent in Asia.

Production

Agricultural resource endowments in Asia are relatively limited. For example, arable land per capita in all of Asia is .14 hectares, about one-half the world average and only one-sixth of the arable land per capita in North America (Table 2).

Table 2. Arable Land, World Regions, 1986.

Country	Total	Per Capita
	(mil. hectares)	(hectares)
Asia	421	.14
North America	235	.87
USSR	228	.81
Africa	166	.28
Latin America	149	.35
Europe	125	.25
Oceania	49	1.96
World	1,373	.27

Within Asia, significant differences in the level of arable land per capita are apparent (Table 3). Thailand and India at .33 and .21 hectares per capita are among the better agriculturally endowed countries. But even here, India is just self-sufficient at very low income and consumption levels. While Thailand has been an important exporter of rice and corn, recent economic growth has resulted in increased local consumption. This has constrained exports of agricultural products.

Table 3. Arable Land, Asia, 1986.

Country	Total	Per Capita
	(mil. hectares)	(hectares)
India	166	.21
China	94	.09
Pakistan	20	.20
Thailand	18	.33
Indonesia	16	.09
Bangladesh	9	.08
Philippines	5	.08
Japan	4	.03
Korea	2	.05
Malaysia	1	.06
Taiwan	1	.05
Asia	421	.14
World	1,373	.27
USA	188	.77

Japan, South Korea, and Taiwan are very poor in land resources. With economic growth they have experienced rapidly declining levels of self-sufficiency. For example, in 1985, Japan imported 44 percent of its food supply, and South Korea and Taiwan more than one-third of their food needs.

China has significant land resources but, with the largest population in the world, has only .09 hectares per capita, is *relatively* land poor. Further, with very intensive land use resulting in land degradation and with the transfer of substantial land area to non-agricultural uses, arable land has declined 5 percent over the past fifteen years.

A substantial measure of economic freedom and incentive was given to Chinese farmers beginning in the late 1970s. The immediate result was a large increase in agricultural output and some short-run export competition as China sold limited amounts of grain in East Asian markets. However, this increased production has now been more than completely absorbed within China through diet changes related to improved incomes that were generated in large part by the increased agricultural production. As noted above, China is now our eighth most important market. In the future, increases in agricultural output in China will likely follow the more traditional technology related growth path and will not be able to keep pace with consumption changes. Thus, China should provide a growing market for U.S. exports. Political-economic reform emphasizing openness to world markets would further expand market opportunities there.

Policies

Food and agricultural policies are an additional factor that affect food production and consumption, and thus trade, in Asia. Agricultural subsidies and other protection measures are the most common policies, and have an indirect impact on consumption in addition to aiding farm producers. Generally, a subsidy to agricultural producers is a tax to consumption. Producer subsidy equivalents (PSEs) are a common overall measure of degree of agricultural support. In Table 4, they are expressed as a percentage of total producer value. In Japan, PSEs are as high as 79 percent, indicating that for every yen received by Japanese farmers, 79 percent comes from government subsidy of some kind. Correspondingly, 39 percent of what consumers pay for food results indirectly from those subsidies. Similar policies favoring agricultural production and discouraging food consumption exist to a lesser degree in most other Asian countries. India is an exception, where a tax on agriculture actually results in a small subsidy to consumers.

Table 4. Producer and Consumer Subsidy Equivalents, 1986.

Country	PSE	CSE
	(Percent of Producer/Consumer Value)	
Japan	79	- 39
Korea	58	- 60
Taiwan	23	- 29
Indonesia	20	- 26
India	- 11	3
United States	36	- 14

Thus, most policies affect trade negatively in two ways: first by encouraging additional production, and secondly by discouraging consumption. This phenomenon as noted above is very apparent in Japan and to a lesser extent in South Korea and Taiwan. In Japan, a quota on beef imports, for example, limits the amount of beef available in the internal market. This results in very high prices to consumers, causing a low level of consumption (Table 5). The high prices also encourage farmers to produce more beef, further restricting the need for imports. Total meat consumption per capita in Japan is only one-third the level in the U.S., primarily due to these very high prices, though income levels are comparable in the two countries.

Table 5. Retail Prices per Pound, U.S. Dollars, 1987.

Commodity	Japan	Korea	Taiwan	U.S.	Japan/U.S.
Rice	$ 1.65	$0.58	$0.45	$0.40	4.1
Flour	0.65	0.14	0.29	0.20	3.2
Beef	11.19	3.55	4.04	1.68	6.7
Pork	4.63	1.75	2.28	1.90	2.4
Chicken	3.34	---	0.96	0.78	4.3

Recent policy changes in Japan and to a lesser extent in Korea and Taiwan, however, point to expanded trade possibilities. In Japan, quotas on beef imports are being phased out by 1993. Already consumption has increased 23 percent in the past three years (a similar increase in beef consumption has occurred in Taiwan). As prices come down, consumption will increase further, production will be discouraged and imports will increase dramatically. Beef imports now make up 50 percent of beef consumption in Japan and the U.S. provides one-half of the imports.

An additional factor in Japanese agriculture also points to a rise in beef imports (and a slowing of the growth in corn and soybean imports). Historically, the U.S. has provided grains and soybeans as feed inputs to a growing beef production industry in Japan. With insufficient land resources to support beef breeding enterprises, the Japanese beef industry relies on dairy calves for feeder cattle. As long as consumption of dairy products was increasing, a growing supply of feeder animals was assured. Now that growth in the dairy industry has slowed, domestic beef production will have to plateau, and most beef consumption increases will need to be met with imports. At the same time, growth in exports of U.S. corn and beans to Japan will probably be slower and tied more to growth in poultry and swine production then to beef consumption changes.

Economic Development

Economic development levels vary widely when measured in income per capita (Table 6). With the strong yen, Japan has one of the highest levels of income per capita in the world. However, as noted earlier, very high food prices (Table 5) keep the Japanese population from consuming at a level commensurate with their income. In fact, many food items are priced at levels two to seven times greater than U.S. prices.

Table 6. Income per Capita, Asia, 1987.

Country	1987	Annual Growth (1965-87)
Japan	$19,494	4.2
Hong Kong	8,229	6.2
Taiwan	4,945	(6.5)
S. Korea	2,690	6.4
Malaysia	1,948	4.1
Thailand	871	3.9
Philippines	603	1.7
Indonesia	411	4.5
Pakistan	343	2.5
India	326	1.8
China	278	5.2
United States	18,439	1.5

The rapidly growing middle-income countries of Asia (Taiwan, South Korea, Hong Kong, and Singapore) are the most dynamic markets and provide a significant share of the U.S agricultural export markets in the region, even though they have very modest population levels.

Most of the large Asian countries are at very low income levels of about $400 per capita per year or less. Importantly, with the exception of the Philippines and the Indian subcontinent, most countries have growth rates exceeding four percent per year. Combining low and middle income status with four percent or better growth rates means that food consumption growth will outstrip food production in each of these countries and present important growth markets for U.S. exports.

Population Levels

While per capita changes in income suggest prospects for export growth, total population strongly influences the potential size of the market. Here again, Asia with 58 percent of the world's population presents very positive opportunities. Actually, the current strong markets of Japan, Taiwan and South Korea (30 percent of U.S. agricultural exports) with a combined population of 184 million represent only 6 percent of the almost 3 billion people in Asia (Table 7), an indication that we have only scratched the surface of a much larger potential market in Asia.

Table 7. Population, Asia, 1987.

Country	Population
	(millions)
China	1,048
India	798
Indonesia	171
Japan	122
Bangladesh	106
Pakistan	102
Philippines	58
Thailand	54
South Korea	42
Taiwan	20
Malaysia	16
Hong Kong	6
Asia	2,911
	(58% of the world)

Summary

Future agricultural trade prospects in Asia depend on levels of economic development; economic growth rates; natural resources and food production possibilities; agricultural, food, and trade policies; and population levels. Each of these determinates is positive for future trade growth and together present a clear potential for continuing growth in U.S. agricultural trade with Asia.

The nature of that trade will be dynamic, with emphasis on feed and food grain trade to countries that have the agricultural resource possibilities to support substantial livestock populations such as China, and with greater emphasis on livestock product exports to land poor countries like Japan, South Korea, and Taiwan.

A number of large Asian countries like India, China, Indonesia, Pakistan, and Bangladesh, have yet to experience the degree of economic growth necessary to become substantial markets. Yet, in most of these heavily populated countries, the agricultural resource base will never be sufficient to support food demand increases that will come with development. This is the most important reality of the food equation in Asia and the reason for optimism concerning future trade prospects there. However, political and economic policy reform will be essential for some of these countries to realize their considerable potential for economic growth and trade.

U.S. Trade Patterns and Prospects for Asia: High Value Agricultural Products

*Dennis R. Henderson and James R. Dayton**

Introduction

The importance of international markets to the U.S. agricultural economy is illustrated by the observation that, over the past 15 years, the value of exports has equaled 46.7 percent of the gross domestic product (GDP) of the farm sector. Exports can be represented in many ways. For purposes here, they are divided into two categories: primary commodities and high-value products. This paper addresses the latter -- from the perspectives of: (1) their relative importance in the mix of U.S. agricultural exports, (2) factors that appear to affect the competitiveness of the U.S. in international markets for these products, and (3) identification of high-potential markets for such products in Pacific Rim countries.

High-value agricultural products are defined herein as those with a wholesale value that exceeds $400 per ton (1987 basis). They include high-value farm commodities such as live animals, fresh fruits and vegetables, and tree and ground nuts, and value-added (processed) products such as meat, dairy and poultry products, cereal mill and bakery products, refined fats and oils, sugars and sweeteners, preserved fruits and vegetables, beverages and syrups, hides and skins, natural fiber products, tobacco products, and spices and extracts. On a volume basis these products account for less than 10 percent of all U.S. agricultural exports. But, because of their high per-unit value, they constitute nearly half of the value of all foreign sales of agricultural products (Table 1).

High-value products account for a significantly larger share of total world trade in agricultural products than they do of the value of U.S. agricultural exports (Table 2). Thus, the U.S. appears to be relatively less competitive in international markets for these products than it is in markets for other agricultural goods, that is, primary commodities such as grains and oilseeds.

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Table 1. U.S. Agricultural Exports

Year	All Products	High Value Products[a]	
	($ Million)	$ Million	Percent
1960	4,832	2,749	56.9
1965	6,529	2,949	45.2
1970	7,259	3,449	47.5
1975	21,889	7,375	33.7
1980	41,233	17,362	42.1
1985	29,041	13,428	46.2
1988	37,093	18,227	49.1

[a] Animals and products, fruits and preparations, vegetables and preparations, oilseed products, tobacco and products, natural fibers, seeds, sweeteners, beverages, and nursery products.
Source: [1], various issues.

Table 2. High Value Products as a Share of Agricultural Trade

Year	Total World Trade	U.S. Exports
	Percent	
1965	85.2	45.2
1970	83.7	47.5
1975	75.9	33.7
1980	79.5	42.1
1985	82.1	46.2

Source: Table 1 and [2], various issues.

Economic Impacts of High-Value Exports

High-value product exports are distinguished from other agricultural commodities in at least two ways: (1) they are more stable over time, and (2) they generate greater domestic economic activity. Because of these characteristics, exports of high-value products offer more significant benefits to the U.S. at large, and to the farm and food sector specifically, than do primary commodity exports.

Annual variations in agricultural exports are shown in Table 3. Variability has increased over time, increasing economic uncertainty throughout the agricultural sector. However, annual variation in high-value exports is appreciably less than for primary commodities. Thus, these products provide a more stable source of income, helping to mitigate economic swings in the sector caused by gyrations in foreign sales.

Table 3. Annual Variation in Agricultural Exports

	1961-1988	1971-1988	1981-1988
	Average Annual Change, Billion Dollars		
All Products	2.5	3.7	4.1
Primary Commodities	1.8	2.5	2.9
High-Value Products	1.0	1.5	1.5

Source: Compiled from [1].

Domestic income effects of high-value exports are, in aggregate, about 55 percent greater than for primary commodities (Table 4). That is, each dollar of high-value product exports generates a total of $2.88 in earnings throughout the economy whereas a dollar's worth of primary commodity exports generates only $1.86 in total income. As logic suggests, the additional income from high-value exports comes in the down-stream processing and distribution industries, reflecting the value-added by industries beyond the farm gate. However, the farm-level income effects from high-value exports are about equal to those from primary commodities. This means that, income-wise, farmers as a group are essentially indifferent to the mix of products in the export account while those in the down-stream industries benefit significantly from greater emphasis on high-value exports. By contrast, the up-stream farm input industries have a clear income-related preference for primary commodity exports.

Table 4. Economic Multipliers for U.S. Agricultural Exports

	Total	Up-Stream	Farm-Level	Down-Stream
All Products	2.23	0.59	0.83	0.81
Primary Commodities	1.86	0.72	0.85	0.29
High-Value Products	2.88	0.31	0.78	1.79

Source: [3]

U.S. Competitiveness in World Markets for High-Value Products

High-value product exports generate significant economic benefits. Such products also make up a substantially smaller share of U.S. agricultural exports than is their share of total world agricultural trade. Thus, it is important to understand what affects the competitiveness of American firms in world markets for these products. Most such products are produced by firms generally classified as food processors, thus the international market performance of the food processing industries provides some insights.

U.S. food processors are significantly less export oriented than are those in other industrial countries (Table 5). Among the other OECD countries, the food processing industries in only one, Japan, export a smaller share of output than does the U.S. By contrast, exports account for more than 40 percent of all processed food output in four of the 18 industrial countries examined: Belgium, Denmark, the Netherlands, and New Zealand. Further, trends in recent years show exports becoming somewhat less significant for U.S. firms while increasing in relative importance for food processing firms throughout the industrial countries in general. Clearly, the export market performance of U.S. food processing industries as a group trails that of competing nations. Thus, the relatively low share of high-value products in the U.S. export product mix appears to be at least in part due to the lower competitiveness of U.S. food processors in world markets.

Table 5. Exports as a Share of Processed Food Production

	1975	1985
	Percent	
18 OECD Countries[a]	19.2	21.2
9 European Community Countries	22.7	27.2
8 Other Non-U.S. OECD Countries	11.5	16.6
United States	3.4	3.1

[a] Organization for Economic Cooperation and Development
Source: [5]

There are, nonetheless, some significant differences in the export performance of different food processing industries in the U.S. (Table 6). Even so, no single industry exports as large a share of its output as is the average for all food industries in the industrial country, OECD bloc. The fats and oils industry stands out as the export leader in the U.S. Of all of the industry groupings shown, this one produces the most homogeneous products, led by soybean oil. This suggests that U.S. food processors may be most export-oriented for the less differentiated, more commodity-like products, an observation that is supported by some of the subsequent analysis.

A commonly-used measure of product differentiation is the extent to which a product is advertised. In essence, heavily advertised products are viewed as less homogeneous; the most important purpose of advertising being to create a unique image of and demand for the advertised product. Based on data from a panel of leading U.S. food processing firms, it appears that those who sell less advertised (more homogeneous) products have a higher propensity for product exports than do firms with heavily advertised goods (Table 7), that is, for firms that are light rather than heavy advertisers exports account for a significantly higher share of total shipments from U.S. plants.

Table 6. Exports by U.S. Food Processing Industries, 1988

Industry	Exports as a Share of Total Shipments
	Percent
Fats and Oils	18.8
Grain Products	7.1
Meat Products	5.2
Sugar and Confections	3.5
Preserved Fruits and Vegetables	3.0
Beverages	1.2
Dairy Products	1.1
Bakery Products	0.3

Source: [6]

Table 7. Foreign Market Performance of Leading U.S. Food Processors

	Heavy Advertisers[a]	Light Advertisers[b]
	Percent	
Exports as a Share of Shipments From U.S. Plants	1.9	4.7
Exports as a Share of Total Foreign Sales	27.9	73.9
Shipments from Foreign Plants as a Share of Worldwide Sales	18.0	4.4

[a] Expenditures on media advertising equal to 1 percent of sales or more
[b] Expenditures on media advertising less than 1 percent of sales
Source: sample data

Further, firms selling less advertised, more homogeneous products depend more heavily on domestic production to supply international markets, whereas highly differentiated products tend to be supplied to foreign markets primarily from foreign plants. That is, U.S. producers of differentiated high-value agricultural products have a strong propensity to invest in foreign processing plants and a low propensity to export such products from the U.S. While we do not yet have sufficient information on non-U.S. food processing firms to determine if foreign firms behave in the same manner, the earlier observation that U.S. firms in general are less export oriented than are their competitors in other industrial countries suggests that the low export propensity by U.S. producers of highly differentiated products may be a uniquely American phenomenon.

It also appears that larger firms tend to export less and invest in foreign production facilities more than do smaller firms (Table 8). The value of exports as a share of total sales of food products by all firms that are involved in food processing averages more than three times larger than the export share for the 10 largest U.S. food processing firms. By contrast, the largest firms source a substantially larger share of their total worldwide food sales from plants that they own in foreign countries. Thus, export propensity for U.S. producers of high-value products appears to be inversely related to firm size.

Table 8. Shipments by U.S. Food Processors*

	Exports from U.S. Plants	Shipments from Foreign Plants
	Percent of Total Food Sales	
All Food Processing Firms	4.7	9.7
64 Leading Firms	2.2	20.0
10 Largest Firms	1.6	22.9

Source: [6] and sample data

Export performance also appears to be a function of the extent to which a firm specializes in the food business (Table 9). Exports account for nearly twice the share of total shipments from U.S. plants for firms that are exclusively in the food business compared to firms where food accounts for less than two-thirds of total sales. Likewise, exports make up a significantly larger share of non-U.S. food sales for the former.

Table 9. Exports by Leading U.S. Food Processing Firms

	Specialized Food Firms[a]	Diversified Product Firms[b]
	Percent	
Exports as a Share of Food Shipments from U.S. Plants	3.4	1.8
Exports from the U.S. as a Share of Total Foreign Food Sales	61.5	46.0

[a] Food products account for 100 percent of total sales
[b] Food products account for less than two-thirds of total sales
Source: sample data

Interestingly, food processing firms organized as farmer cooperatives appear to be more aggressive exporters than are investor-owned firms (Table 10). Exports as a share of total

shipments from domestic plants are roughly twice as great for the former. Arguably this reflects the primary orientation of farmer cooperatives toward expanding the market for their member-owner products as contrasted to the return-on-investment motivation typical of investor-owned firms.

Table 10. Exports by Cooperative and Investor-Owned Food Processing Firms

	Exports as a Share of Food Shipments from U.S. Plants
	Percent
Investor-Owned Corporations	1.9
Farmer-Owned Cooperatives	3.9

Source: sample data

Using regression analysis, the relationship between a number of structural and behavioral variables and export propensity in the U.S. food processing industries was estimated (Table 11). Export propensity is defined as: exports as a share of total shipments from U.S. plants. Product transportability, concentration of sellers in the industry, the share of a firm's labor force employed in non-production jobs, and the firm's capital to sales ratio are positively related to export propensity while the other variables examined exhibit an inverse relationship. Overall, variation in the nine factors studied explained 38 percent of the variation in export propensities among the 41 food processing industries included in the analysis.

Some of these relationships are logically obvious and need no elaboration. An example is the positive relationship with product transportability and the inverse relationships with wage rates and height of trade barriers. The inverse relationship between export propensity and advertising intensity tends to confirm the earlier observations concerning product differentiation. Product differentiation also may explain the inverse connection between exports and research and development. That is, to the extend R&D is used to create differentiated products, this relationship is consistent with the view that U.S. food firms are less aggressive exporters of differentiated than homogeneous goods.

The positive relation of seller concentration, non-production workers, and capital investment to export performance are particularly interesting. Seller concentration implies that the leading firms have captured a significant share of the domestic market--apparently this same expertise is being used to gain a foothold in export markets. Non-production workers include sales and marketing personnel, suggesting that as a firm puts more relative emphasis on such functions, benefits may be realized in export markets. Finally, the positive correlation between capital investment and exports suggests that U.S. food firms may have a relative advantage in export markets for goods that are capital intensive, that is, that require relatively large amounts of capital, compared to labor, to produce.

Table 11. Factors Related to Export Propensity in Food Processing Industries[a]

Factor	Percent Change in Export Propensity Associated with a 10 Percent Increase in Factor Value
	Percent
Product Transportability	+10.4
Seller Concentration	+ 6.6
Non-production Workers as a Share of Labor Force	+ 3.4
Total Capital Investment per Dollar of Sales	+ 3.1
Index of World Food Trade Barriers	- 0.7
Research and Development Spending as a Share of Sales	- 2.0
Advertising Expenditures as a Share of Sales	- 4.8
Share of Commodity Input Contracted	- 7.3
Hourly Wage Rate	-26.0
$\overline{R^2}$	0.38

[a] 1982 data from 41 4-digit SIC food processing industries
Source: based on [7]

Overall, therefore, it appears the U.S. food processing industries are less competitive in export markets than are similar industries in other advanced countries. Yet, there are a number of characteristics that seem to be associated with those firms and industries within the U.S. that are above average in terms of export performance. As specific import markets for high-value agricultural products in the Pacific Rim countries are identified in the following section, it is important to reflect on the structure and behavior of the domestic industry that are actual or potential suppliers to those markets. The key is to identify those high potential import markets where U.S. industry demonstrates a large number of the above characteristics that are important determinants of export competitiveness.

High-Value Product Trade in the Pacific Rim

For the purposes herein, the Pacific Rim (PacRim) is defined as those countries making up the regions generally known as East Asia, South Asia, Southeast Asia, and Oceania. Countries in each of these regions for which trade data on high-value products were available are detailed in Table 12. All observations for the PacRim in total are sums of the related data for each of these 26 countries. Each country was then analyzed on a product-by-product basis and specific country/product combinations were singled out for more detailed analysis on the basis of a set of decision rules (detailed below).

The Pacific Rim is a particularly important region for exports of U.S. high-value products (Table 13). This region accounts for 37 percent of the value of all U.S. agricultural export shipments but 42 percent of the U.S. shipments of high-value products. Likewise, whereas high-value products make up less than 49 percent of all U.S. agricultural exports, they account for 55 percent of all shipments to PacRim countries.

Table 12. Pacific Rim Countries

East Asia	South Asia	Southeast Asia	Oceania
China	Afghanistan	Brunei	American Samoa
Hong Kong	India	Burma	Australia
Japan	Nepal	Cambodia	New Caldonia
Macao	Pakistan	Indonesia	New Zealand
Mongolia	Sri Lanka	Laos	Papua New Guinea
South Korea	Malaysia		
Taiwan	Philippines		
	Singapore		
	Thailand		

Table 13. U.S. Agricultural Exports to the Pacific Rim, 1987

	Share of Total U. S. Agricultural Exports
Exports to the Pacific Rim	
All Agricultural Products	37.1%
High-Value Products	42.1%
Exports of High-Value Products	
To All Markets	48.7%
To the Pacific Rim	55.2%

Sources of trade data used in this analysis include the "Crops, Livestock and Fishery Products" (CLF) domain from the Food and Agriculture Organization of the United Nations (FAO) [4], and "Foreign Agricultural Trade of the United States" (FATUS) [2] from the U.S. Department of Agriculture. The CLF data include annual quantities (metric tons) and values (US dollars) of imports and exports by product category for about 250 countries, including those in Table 12. FATUS includes similar quantity and value data by product category and country of destination and origin for U.S. exports and imports, respectively. However, the product categorization schemes are dissimilar. Because the FATUS designations allow calculation of the U.S. share of each country's imports, they were used as the primary product classifications. The CLF data were then partitioned into the most similar FATUS product categories, generating more than 50 distinct product groups. Table 14 contains a list of these product groupings and the value of Pacific Rim imports in 1987. Total value of these items imported to the Pacific Rim countries in 1987 was approximately $26 billion.

With more than 50 product categories and 26 countries, the number of potential country/product combinations exceeds 1,300. The sheer magnitude mandates some selection process in order to limit the number of markets for detailed analysis to a manageable number. Thus, somewhat arbitrary selection rules were imposed. The intent was to select only those markets that account for the most significant shares of the region's high-value product imports or that have demonstrated above-average rates of growth. For purposes herein, these are considered to be "high potential" markets for U.S. exports.

Table 14. Total Value of Pacific Rim Imports By Product Category, 1987 (Part 1)

	($ mil.)
LIVE ANIMALS INCLUDING POULTRY	
Live Animals	352
Live Poultry	112
MEATS	
Beef and Veal	495
Pork	1,504
Poultry	490
Variety Meats	495
Other Meats Fresh or Frozen	333
EGGS and DAIRY PRODUCTS	
Eggs	103
Evaporated and Condensed Milk	519
Cheese	229
FATS and OILS (animal and vegetable)	
Tallow	25
Other Fats and Oils	29
Soybean Oil	532
Other Vegetable Oils and Waxes	2,406
FRUIT, JUICES AND NUTS	
Citrus Fruits	606
Apples	127
Grapes	60
Other Non-citrus Fruits	922
Processed Fruits and Juice	577
Nuts except Almonds and Peanuts	348
Peanuts	183
Almonds	118
HIDES and SKINS/FIBER PRODUCTS	
Cattle Hides	1,533
Fur Skins	580
Other Hides and Skins	285
Wool and Mohair	2,205
Cotton excluding Linters	29
Cotton Linters	2,580
Fibers excluding Cotton	609
VEGETABLES	
Fresh Vegetables	328
Frozen Potatoes	85
Canned Vegetables	122
Other Vegetables, prepared or preserved	107
Pulses	339
PROCESSED GRAIN PRODUCTS	237

Table 14. Total Value of Pacific Rim Imports By Product Category, 1987 (Part 2)

SWEETENERS, CONFECTIONERY, SPICES and BEVERAGES	($ mil.)
Sugar and Related Products	1,600
Coffee	988
Cocoa	224
Chocolate	209
Tea and Mate	334
Spices	298
Beverages, excluding juices	793
Wine	185
MANUFACTURED TOBACCO PRODUCTS	1,100

Source: [4]

Within each product category, countries were selected for specific analysis if: (1) the quantity of high-value imports from all sources in 1987 exceeded the average for all PacRim countries (Table 15: high-volume test), or (2) the rates of growth in the quantity of high-value imports in both the short run (5 years, 1982 through 1987) and the long run (25 years, 1962 through 1987) equaled or exceeded the simple average growth rates for the entire region (Table 16: rapid growth test).

Note that four countries meet both sets of criteria: India, Pakistan, S. Korea, and Singapore. These are both high volume and high growth markets. Additionally, Japan, Hong Kong, China, and Malaysia meet the high-volume criterion; Brunei and Taiwan meet the rapid growth criterion. All told, 10 countries pass the high potential market test for high-value product imports in total.

Table 15. High Volume Import Markets in the Pacific Rim, 1987

Country	Imports
	(Mil. Metric Tons)
Japan	8.60
India	3.61
Hong Kong	3.51
China	3.12
S. Korea	2.45
Pakistan	2.11
Malaysia	1.81
Singapore	1.71
Pacific Rim Average, All Countries	1.23

Table 16. Rapid-Growth Import Markets in the Pacific Rim, 1987

Country	Average Annual Growth Rate 1962 - 1987	1982 - 1987
	Percent	
India	18.9	23.0
Pakistan	43.4	17.4
S. Korea	61.3	8.8
Singapore	12.6	7.4
Brunei	33.9	7.0
Taiwan	44.2	4.0
Pacific Rim Average, All Countries	9.6	4.0

Another decision rule was imposed in selecting specific high-value products to be analyzed in each of the identified countries. In keeping with the "above average" concept, products were selected on the basis of the their import value. That is, products were selected if they had an import value (1987 basis) in any of the 10 countries that exceeded the average value for all high-value imports into the same country. Thus, the following discussion is limited to those product/country combinations where imports of high-value products are above-average when compared to all possible product and country combinations within the Pacific Rim. All told, 356 specific product/country combinations were identified as high potential import markets.

The discussion of high potential markets is organized by general product categories. Within each such category, the total value of imports from all sources in 1987, measured in U.S. dollars as reported in CLF, is shown for each specific product that met the above-average selection rule in at least one country. Then, for each such country, its share of total PacRim imports of each product class is calculated, followed by the product class is share of total high-value imports by that country. This provides a representation of the relative importance of each identified product/country combination in terms of overall import activity.

Following this, the importance of the U.S. as a supplier to these high potential markets is identified. Using FATUS data, the share of total imports for the product class that originates from the U.S. is calculated, along with the country's share of total U.S. exports and its share of U.S. exports to the Pacific Rim region.

In essence, where the U.S. share of an identified high potential product/country import market is low, and/or where the identified market accounts for a small share of both total U.S. exports and U.S. exports to the PacRim, we suggest that the U.S. is less than fully competitive as an import supplier. But, because such markets meet the "high potential" tests, they are viewed as potentially lucrative opportunities for new export initiatives. By contrast, identified markets where the U.S. already has a strong presence are considered to be well-developed export markets with a demonstrated U.S. competitive

advantage. The latter are markets where further exploitation of U.S. competitive advantages may be warranted whereas the former would appear to demand the development of new competitive strategies.

Finally, import volume growth trends are shown for each of the identified high potential product/country combinations. These are compound average annual rates of change over the short term (1982 - 1987) and long term (1962 - 1987), based on CLF data. High rates of growth in both the short and long terms, all else accounted for, are viewed as indicators of markets with the greatest potential pay-off from additional market development efforts.

Live Animals

Total *live animals* (except poultry) imports to the Pacific Rim countries were valued at $352 million in 1987, accounting for 1.3 percent of all high-value product (HVP) imports into the region. The long term (1962-1987) compound average annual growth in volume of live animal imports into the region was +4 percent while the more recent short term (1982-1987) rate fell to -1 percent. Detail on the identified high potential product/country markets, cattle and pigs in Hong Kong and pigs in Malaysia, is presented in Table 17, along with indicators of U.S. performance in those markets.

Hong Kong and Malaysia do not reflect the trend evident in the Pacific Rim as a whole. During the period 1962-1987 these countries had compound average annual rates of growth of -1 percent and +2 percent, respectively. For the period 1982-1987 Hong Kong had a growth rate of +4 percent and Malaysia +1 percent.

Hong Kong is a major import market for live animals, accounting for nearly 60 percent of all Pacific Rim imports. Pigs constitute the single most important product, 88 percent of the live animal total. The U.S. has a very low penetration of this market, less than 1 percent. By contrast, the U.S. has a much larger share, 5.3 percent, of the smaller Malaysian live animal market, which is predominantly cattle. If the U.S. could expand its share of the Hong Kong market just enough to equal its share in Malaysia, additional sales would be roughly $11 million (1987 dollars).

Total *live poultry* imports to the PacRim were valued at $112 million in 1987, about 0.4 percent of the region's HVP imports. Details on the high potential import markets are presented in Table 18, along with data on the performance of the U.S. in those markets.

Table 17. Live Animal (except Poultry) Import Markets

Significant Products: Total Imports	Hong Kong	Malaysia
Cattle ($ mil)	24	8.5
Pigs ($ mil)	179	[a]
Total Live Animal Imports		
Share of Total Pacific Rim Imports (%)	59	3.3
Share of Total High Value Product Imports (%)	7	1.3
U.S. Live Animal Exports		
U.S. Share of Imports (%)	<1	5.3
Share of Total U.S. Exports (%)	<1	<1
Share of U.S. Exports to Pacific Rim (%)	<1	1.8
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987	-1	-2
1982-1987	4	1

[a] Does not meet the high potential import market tests

The PacRim import growth rate for live poultry from 1962 to 1987 was 11 percent and from 1982 to 1987, 7 percent. This indicates some slowdown in the expansion of the market. Hong Kong, however, exhibited a steady 10 percent growth rate for both periods while Malaysia had annual declines in the 5 to 6 percent range.

Table 18. Live Poultry Import Markets

Total Imports	Hong Kong	Malaysia
Poultry ($ mil)	68	6
Total Live Poultry Imports		
Share of Total Pacific Rim Imports (%)	71	5.7
Share of Total High Value Product Imports (%)	2.6	<1
U.S. Live Poultry Exports		
U.S. Share of Imports (%)	<1	7
Share of Total U.S. Exports (%)	<1	<1
Share of U.S. Exports to Pacific Rim (%)	<1	1.8
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987	10	-5
1982-1987	10	-6

Hong Kong is the major import market for live poultry, accounting for nearly 71 percent of all PacRim imports. However, the U.S. penetration of the Malaysian market at 7 percent is significantly greater than its 1 percent of Hong Kong imports. If the U.S. achieved the same share of the steadily growing Hong Kong market as it has in Malaysia, additional U.S. live poultry exports would be approximately $14.5 million (1987 dollars).

Meats

Meat imports into the PacRim were valued at approximately $3.3 billion in 1987, a significant 12.6 percent of all HVP import purchases. Meat imports can be divided into five categories based on available data: beef and veal, pork, poultry meats, variety meats, and other fresh or frozen meats. A number of specific products can be identified within several of these categories.

Total *beef and veal* imports were valued at $495 million in 1987, accounting for roughly 16 percent of all meat in-flows. Details on the identified high potential import markets are presented in Table 19, including information on the performance of the U.S. in those markets.

Table 19. Beef and Veal Import Markets

Significant Products: Total Imports		Hong Kong	Taiwan	Brunei	Malaysia
Beef Preparations	($ mil)	[a]	[a]	1.8	[a]
Beef and Veal	($ mil)	[a]	90	1.5	[a]
Beef and Veal; Boneless	($ mil)	62	[a]	[a]	37
Total Beef and Veal Imports					
Share of Total Pacific Rim Imports (%)		34.6	26.4	1.3	14.7
Share of Total High Value Product Imports (%)		2.9	4.7	2.8	4
U.S. Beef and Veal Exports					
U.S. Share of Imports (%)		12.3	9.8	<1	2.1
Share of Total U.S. Exports (%)		1.4	1.1	<1	<1
Share of U.S. Exports to Pacific Rim (%)		1.8	1.5	<1	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987		4	10	-3	15
1982-1987		7	[b]	9	14

[a] Does not meet the high potential import market tests
[b] No volume data were reported for 1962; 1972-1987 compound annual rate of growth was 14.7%

The long-term rate of growth in the volume of beef and veal imported to the PacRim was 11 percent. However, more recently the short-run growth rate declined to 3 percent.

Taiwan and Hong Kong, followed by Malaysia, are the major importers of beef and veal products that met the high potential market tests. All three have shown continuing growth. By contrast, the import market in Brunei declined by about 3 percent per year over the 1962-1987 period. But, the rate of growth in Brunei over the last five years is +9 percent. Brunei is currently a small market where the U.S. has a very small market share. But because it meets the high potential market tests and has demonstrated rapid growth in recent years, it may be a market worthy of some targeted development activity.

Approximately 15 percent of the PacRim beef and veal imports go to Malaysia. The U.S. holds only a 2 percent market share, but this country has the most rapidly expanding import market of those studied.

Perhaps the PacRim market that has generated the most interest is Japan. Japan, although accounting for 46 percent of all Pacific Rim beef and veal imports and representing the largest dollar import volume in 1987 at $116 million, did not meet the high potential market test because these products are relatively minor when compared to other Japanese HVP imports; that is, the 1987 beef and veal import value was below the average for all high value product imports.

Pork imports by Pacific Rim countries were valued at $1,504 million in 1987, about half of all meat imports and about 6 percent of all PacRim HVP purchases. Details on the identified high potential markets are shown in Table 20.

Table 20. Pork Import Markets

Total Imports	Japan	Hong Kong
Pigmeat ($ mil)	142	88
Total Pork Imports		
Share of Total Pacific Rim Imports (%)	92.8	6.9
Share of Total High Value Product Imports (%)	10	3.5
U.S. Pork Exports		
U.S. Share of Imports (%)	6.4	1.1
Share of Total U.S. Exports (%)	71.4	<1
Share of U.S. Exports to Pacific Rim (%)	97.5	1.3
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987	15	4
1982-1987	40	11

The compound average annual rate of growth in the volume of pork imported to the PacRim between 1962 and 1987 was 18 percent; but in the 1982-1987 period declined to 12 percent. Japan dominates this market with 93 percent of the region's imports. Pork imports to Japan have risen at a phenomenal average annual growth rate of 40 percent during the most recent 5 year period. The U.S. has a relatively small share of the Japanese market, approximately 6.5 percent, but this accounts for 71 percent of all U.S. pork exports. U.S. sales to Japan were valued at $92 million in 1987. Given the size of the import

market and the relatively small share currently held by the U.S., it appears that there is considerable room for expanding U.S. pork exports to Japan.

PacRim imports of *poultry meats* were valued at $490 million in 1987, approximately 2 percent of all HVP imports to the region. High potential markets are detailed in Table 21.

The volume of poultry meat imports during the period 1962-1987 grew at an average annual rate of approximately 7 percent, rising to an 11 percent rate during the more recent 1982-1987 period. All four identified countries have experienced similar trends toward increasing growth rates. Poultry meat imports are dominated by chicken meat.

Table 21. Poultry Meat Import Markets

Significant Products: Total Imports	Hong Kong	Japan	Brunei	Malaysia
Chicken Meat ($ mil)	97	324	1.5	6
Duck Meat ($ mil)	[a]	[a]	9.5	[a]
Total Poultry Meats Imports				
Share of Total Pacific Rim Imports (%)	20.6	73	2.3	1.2
Share of Total High Value Product Imports (%)	3.4	2.5	9.4	<1
U.S. Poultry Meats Exports				
U.S. Share of Imports (%)	57.2	26.6	6	9.3
Share of Total U.S. Exports (%)	14.3	23.6	<1	<1
Share of U.S. Exports to Pacific Rim (%)	31.6	52	<1	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)				
1962-1987	7	14	25	-2
1982-1987	12	30	29	11

[a] Does not meet the high potential import market tests

Approximately 94 percent of the PacRim poultry meat imports go to Japan and Hong Kong--about 72 percent to Japan alone. During the recent 1982-1987 period, both Japan and Brunei exhibited a growth rates approaching 30 percent. Based on sheer size, Japan probably offers the more attractive opportunity for expansion. The U.S. has achieved a relatively high market share in Japan, about 27 percent, valued at $95 million in 1987. Brunei is a small but rapidly growing market, particularly for duck. While not considered a major export product for the U.S., the U.S. appears to have had reasonable success in selling duck into this market and it may offer interesting possibilities as an international "niche" market for further development.

Total *variety meats* imports were valued at $495 million in 1987, or roughly 2 percent of all HVP imports into the region. Details on the identified high potential import markets

for specific variety meat products are presented in Table 22, along with indicators of U.S. performance in those markets.

Table 22. Variety Meat Import Markets

Significant Products: Total Imports		Hong Kong	Japan	Malaysia
Offals of Cattle, Edible	($ mil)	[a]	404	[a]
Offals other cattle	($ mil)	[a]	[a]	7
Other Prepared Meats	($ mil)	34	[a]	[a]
Total Variety Meats Imports				
Share of Total Pacific Rim Imports (%)		4	90.6	5
Share of Total High Value Product Imports (%)		<1	3.2	2.7
U.S. Variety Meats Exports				
U.S. Share of Imports (%)		11.4	31.9	1.7
Share of Total U.S. Exports (%)		<1	41.2	<1
Share of U.S. Exports to Pacific Rim (%)		1.6	97.3	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)				
1962-1987		3	12	-2
1982-1987		6	29	8

[a] Does not meet the high potential import markets tests

The compound average annual rate of growth in volume of variety meats imports over the long-term, 1962-1987 period was about 13 percent and in the short-term, 1982-1987 period slowed to approximately 8 percent. Exports of edible cattle offals to Japan are the largest single item in this category. Japanese imports grew at a 29 percent annual rate during the most recent 5 years studied. The U.S. has a significant 32 percent share of the Japanese market and this market accounts for nearly all of the U.S. shipments into the region.

Total imports to the Pacific Rim countries of *other fresh or frozen meats* were valued at $333 million in 1987, equal to about 11 percent of all meat imports. Details on the high potential import markets for this class of products are presented in Table 23, along with indicators of U.S. performance in those markets.

The annual rate of growth in PacRim import volume during the 1962-1987 period was 5 percent and during the more recent 1982-1987 period, -1 percent. Japan was the dominant importer of mutton and lamb, the only product class in the other meat category that met the "above average" test. Contrary to PacRim trends, Japanese imports have expanded in recent years. Taiwan and Malaysia are considerably smaller markets but exhibit long term growth trends. The U.S. has unimpressive shares of these markets even though Japan alone accounts for nearly 20 percent of all U.S.exports in this product category.

Table 23. Other Fresh or Frozen Meat Import Markets

Total Imports	Japan	Taiwan	Malaysia
Mutton and Lamb ($ mil)	130	12.4	10
Total Other Meats Fresh or Frozen Imports			
Share of Total Pacific Rim Imports (%)	73.2	4.1	3.5
Share of Total High Value Product Imports (%)	1.7	<1	1.3
U.S. Other Meats Fresh or Frozen Exports			
U.S. Share of Imports (%)	2.9	1.3	<1
Share of Total U.S. Exports (%)	18.9	<1	<1
Share of U.S. Exports to Pacific Rim (%)	67.5	1.7	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)			
1962-1987	-5	13	20
1982-1987	5	[a]	6

[a] No volume data were available for 1982

Eggs and Dairy Products

Egg and dairy product imports into the Pacific Rim were valued at approximately $851 million in 1987, about 3 percent of all HVP import purchases. This category is divided into three categories eggs, evaporated and condensed milk, and cheese.

Total *egg* imports to the Pacific Rim countries were valued at $103 million in 1987, just 0.4 percent of all HVP in-bound trade. Only one high potential market for Table eggs was identified. This is detailed in Table 24.

The average annual rate of growth in the volume of eggs imported into Pacific Rim countries over the longer term, 1962-1987 period was approximately 4 percent. This slowed to just 1 percent from 1982 to 1987. Hong Kong and Japan account for 95 percent of the PacRim egg imports, but the former is the dominant importer. Eggs do not meet the "above average" HVP import product test in Japan. The U.S. has only a small market share in Hong Kong, with that country accounting for a significantly smaller share of U.S. shipments to the PacRim than its share of total PacRim imports. Thus the opportunity would appear to exist for the U.S. to appreciably increase its share of the Hong Kong market.

Table 24. Egg Import Markets

Total Imports	Hong Kong
Eggs ($ mil)	71
Total Egg Imports	
Share of Total Pacific Rim Imports (%)	71
Share of Total High Value Product Imports (%)	2.4
U.S. Egg Exports	
U.S. Share of Imports (%)	8.3
Share of Total U.S. Exports (%)	6.8
Share of U.S. Exports to Pacific Rim (%)	17.6
Compound Avg. Ann. Rates of Growth in Import Vol. (%)	
1962-1987	4
1982-1987	3

The region's imports of *evaporated and condensed milk* in 1987 totaled $519 million, or about 2 percent of all HVP imports. Details on the identified high potential import markets for specific products within this category are presented in Table 25.

The growth in volume imported to the region averaged 3 percent per year between 1962 and 1987 but declined to a 1 percent average during the latter 5-year period. While all four countries shown in the Table have sizeable imports, the U.S. has a negligible market share. Further, China, India, and Pakistan all have significant imports in this category but FATUS indicates that the U.S. has no shipments to those countries. Overall, these product markets appear to be ones that the U.S. has largely left untapped in the Pacific Rim.

Table 25. Evaporated and Condensed Milk Import Markets

Significant Products: Total Imports		Hong Kong	Japan	Taiwan	Malaysia
Dry Skim Cow Milk	($ mil)	[a]	78.6	153	94
Dry Whole Cow Milk	($ mil)	45	[a]	[a]	[a]
Total Evaporated and Condensed Milk Imports					
Share of Total Pacific Rim Imports (%)		14.2	17.5	29.8	18.3
Share of Total High Value Product Imports (%)		2.4	<1	8	10.3
U.S. Evaporated and Condensed Milk Exports					
U.S. Share of Imports (%)		<1	<1	<1	1
Share of Total U.S. Exports (%)		4.3	<1	8.3	46.7
Share of U.S. Exports to Pacific Rim (%)		7.2	<1	13.9	78.5
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987		5	0	5	6
1982-1987		4	3	13	1

[a] Does not meet the high potential import market tests

Total PacRim *cheese* imports in 1987 were valued at $229 million, just slightly less than 1 percent of all HVP purchases. Import markets that met the high potential tests are detailed in Table 26, along with information on the performance of the U.S. in those markets.

Table 26. Cheese Import Markets

Significant Products: Total Imports		Japan	Pakistan
Ghee (from cow milk)	($ mil)	[a]	6.6
Cheese (whole cow milk)	($ mil)	170	[a]
Total Cheese Imports			
Share of Total Pacific Rim Imports (%)		74	2.9
Share of Total High Value Product Imports (%)		1.2	<1
U.S. Cheese Exports			
U.S. Share of Imports (%)		3	2
Share of Total U.S. Exports (%)		14.7	<1
Share of U.S. Exports to Pacific Rim (%)		83.8	2.3
Compound Avg. Ann. Rates of Growth in Import Vol. (%)			
1962-1987		5	13
1982-1987		13	24

[a] Does not meet the high potential import market tests

For the entire region, the compound average annual rate of growth in the volume of cheese imports between 1962 and 1987 was a rapid 12 percent. However, this slowed to around 4 percent during the last five years of this period. Japan is the dominant buyer in the Pacific Rim and accounts for most of the U.S. cheese shipments to the region. However, the U.S. holds only 3 percent of this very significant and rapidly expanding market. India and Malaysia each comprise a sizeable portion of the import market in the PacRim, with 8 percent and 7 percent of total imports, respectively. But, the U.S. does not report export quantities to these markets.

Fats and Oils

Total fats and oils imports into the Pacific Rim were valued at $2,992 million in 1987. This accounts for a significant 11.4 percent of all HVP import purchases. Fats and oils are divided into four categories: soybean oil, tallow, other vegetable oils and waxes, and other fats and oils. Several products can be identified under each product category.

Total imports of *soybean oil* into the Pacific Rim counties in 1987 were valued at $532 million, just over 2 percent of all HVP in-shipments. Details on the identified high potential import markets in the region are presented in Table 27, along with indicators of U.S. performance in these markets.

Table 27. Soybean Oil Import Markets

Total Imports	India	Pakistan	Malaysia	Singapore	China
Soybean Oil ($ mil)	463	99	35	50	143
Total Soybean Oil Imports					
Share of Total Pacific Rim Imports (%)	58.2	18.5	6.6	9.4	27
Share of Total High Value Product Imports (%)	31.6	12.5	3.8	6	9
U.S. Soybean Oil Exports					
U.S. Share of Imports (%)	6.6	88	[a]	<1	[a]
Share of Total U.S. Exports (%)	25.9	33	[a]	<1	[a]
Share of U.S. Exports to Pacific Rim (%)	31.6	73.5	[a]	<1	[a]
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987	-3	-8	100	43	58
1982-1987	27	13	35	40	34

[a] No U.S. exports reported by FATUS

For the entire PacRim region the average annual rate of growth in the volume of soybean oil imports was 14 percent between 1962 and 1987. The growth rate slipped to about 6 percent during the last five years of this period. India is the region's leading

importer. However, the U.S. ships only 7 percent of the soy oil imported by India in comparison with its 88 percent share of the smaller Pakistanian market. These two countries represent nearly all U.S. soy oil shipments to the region despite the presence of several other major importing countries. There may be a considerable opportunity for the U.S. to increase export sales to these latter countries.

In terms of total import value within the general fats and oils classification, *vegetable oils and waxes* other than soybean oil is the largest single product group. PacRim imports in 1987 were valued at $2.4 billion, more than 9 percent of all high-value product imports into the region. The identified high potential import markets for this group of products are detailed in Table 28.

For the entire region, imports during the 1962-1987 period grew at an average annual rate of 11 percent and growth remained fairly steady during the last five years of the period at about 10 percent. Most of the high potential markets, however, have achieved a markedly higher rate of growth in recent years, averaging in the 14-15 percent range for China, Japan, India, and Pakistan and reaching a high of 26 percent per year in South Korea. The specific products imported vary widely among the countries, however, with rapeseed oil leading the way in India, crude organic materials pacing imports in China, and corn oil topping the list in Japan. Thus, this appears to be an area where careful targeting of specific products to specific countries may be a viable export strategy. The U.S. has only small shares of these markets, nowhere supplying as much as 10 percent of the imports. In the two largest corn oil import markets, Japan and Singapore, the U.S. has less than a 3 percent market share and these markets combined account for little more than 10 percent of U.S. corn oil exports. These would seem to be likely markets for additional export targeting by U.S. suppliers.

Table 28. Import Markets for Vegetable Oils and Waxes (except Soybean Oil), Part 1

Significant Products: Total Imports		China	Japan	S. Korea	Hong Kong
Oil of Coconuts	($ mil)	17	[a]	[a]	[a]
Rapeseed Oil	($ mil)	[a]	[a]	[a]	32
Groundnut Oil	($ mil)	[a]	[a]	[a]	27
Crude Organic Materials	($ mil)	116	[a]	58	[a]
Corn Oil	($ mil)	[a]	94	[a]	[a]
Linseed Oil	($ mil)	11	[a]	[a]	[a]
Total Vegetable Oils and Waxes Imports, except Soybean Oil					
Share of Total Pacific Rim Imports (%)		6.6	42.9	3.5	3.7
Share of Total High Value Product Imports (%)		9.8	7.3	3.5	2.9
U.S. Vegetable Oils and Waxes Exports, except Soybean Oil					
U.S. Share of Imports (%)		<1	2.3	10.9	11.2
Share of Total U.S. Exports (%)		<1	8.7	3.4	3.6
Share of U.S. Exports to Pacific Rim (%)		<1	42.5	16.5	17.4
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987		36	[b]	12	12
1982-1987		14	14	26	8

[a] Does not meet the high potential import market tests
[b] No volume data were available for 1962

Table 28. Import Markets for Vegetable Oils and Waxes (except Soybean Oil), Part 2

Significant Products: Total Imports		India	Pakistan	Malaysia	Singapore
Oil of Coconuts	($ mil)	[a]	[a]	[a]	10.7
Hydrogenated Oils	($ mil)	[a]	8.6	[a]	[a]
Rapeseed Oil	($ mil)	250	8.4	[a]	25.6
Corn Oil	($ mil)	[a]	[a]	[a]	18.6
Other Vegetable Oils	($ mil)	[a]	[a]	8	[a]
Total Vegetable Oils and Waxes Imports, except Soybean Oil					
Share of Total Pacific Rim Imports (%)		23	6.2	<1	12.1
Share of Total High Value Product Imports (%)		37.7	18.9	2.5	34.9
U.S. Vegetable Oils and Waxes Exports, except Soybean Oil					
U.S. Share of Imports (%)		<1	<1	6.5	1.5
Share of Total U.S. Exports (%)		<1	<1	<1	1.6
Share of U.S. Exports to Pacific Rim (%)		<1	<1	2.7	7.8
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987		16	13	27	5
1982-1987		15	15	5	11

[a] Does not meet the high potential import market tests

Tallow is a minor import in the Pacific Rim, valued at only $21 million in 1987. However, the U.S. has a significant share of the high potential markets (Table 29).

Table 29. Tallow Import Markets

Total Imports	S. Korea	Taiwan	Pakistan
Tallow ($ mil)	42	24	32
Total Tallow Imports			
Share of Total Pacific Rim Imports (%)	28.8	16.4	21.9
Share of Total High Value Product Imports (%)	1.7	1.2	4
U.S. Tallow Exports			
U.S. Share of Imports (%)	57.6	18.3	64
Share of Total U.S. Exports (%)	6.6	1.2	5.6
Share of U.S. Exports to Pacific Rim (%)	39.6	7.2	33.5
Compound Avg. Ann. Rates of Growth in Import Vol. (%)			
1962-1987	-2	1	1
1982-1987	9	[a]	8

[a] Data for 1982 were unavailable

The compound average annual rate of growth in tallow import volume in the region during the 1962-1987 period was about 7 percent. During the last five years the rate declined to -2 percent. The U.S. has a dominant share of the markets in South Korea and Pakistan, both markets that are expanding contrary to regional trends. The U.S. share of the Taiwanese market trails sharply behind the two other identified high potential markets, suggesting that there may be opportunity for a substantial expansion of the U.S. presence in this country.

Pacific Rim imports of *other fats and oils* not elsewhere classified in 1987 were valued at $29 million. For this product category, only one market met the tests as a high potential opportunity -- fatty acid imports into Pakistan. Details are presented in Table 30.

The compound average annual rate of growth in the volume of fatty acid imports in the region was 5 percent in the 1962 to 1987 period, but declined to about 2 percent during the last 5 years. Pakistan has registered more pronounced rates of growth and appears to be the most significant PacRim market. Japan, South Korea, Hong Kong, and Taiwan are minor buyers on world markets. The U.S. is not a factor is these markets.

Table 30. Import Markets for Other Fats and Oils (not elsewhere classified)

Total Imports		Pakistan
Fatty Acids	($ mil)	6
Total Other Fats and Oils Nec. Imports		
Share of Total Pacific Rim Imports (%)		32.3
Share of Total High Value Product Imports (%)		1.2
U.S. Other Fats and Oils Nec. Exports		
U.S. Share of Imports (%)		<1
Share of Total U.S. Exports (%)		<1
Share of U.S. Exports to Pacific Rim (%)		<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987		54
1982-1987		25

Fruits, Juices, and Nuts

Nearly $3 billion in various fruits, juices, and nuts were purchased by Pacific Rim countries in 1987. As a group, these products made up more than 11 percent of all inbound shipments of high value products.

The value of *citrus fruit* imports into Pacific Rim countries in 1987 totaled $606 million, 2.3 percent of all HVP acquisitions and about 21 percent of all fruit, juice, and nut imports. The high potential markets for these products are identified in Table 31. Also included are performance data for U.S. citrus fruit exports into these markets.

The compound annual rate of growth in the volume of citrus fruit imports into the Pacific Rim countries from 1962 to 1987 averaged 11 percent, declining somewhat during the last five years to about 7 percent. Japan is the major importer, accounting for two-thirds of the region's total and is growing at an annual pace exceeding 20 percent. Grapefruit, oranges, lemons and limes are the predominant Japanese imports. The U.S. supplies a dominant, 65 percent share of Japanese imports.

Oranges are the principal citrus imports into the other four high potential countries. However, the U.S. has a dominant share only in the more slowly expanding Hong Kong market. With fairly rapid growth in imports in Brunei and Malaysia, albeit from relatively low levels, these would appear to be markets where the U.S. presence could be expanded appreciably, perhaps through similar strategies that have been used with obvious success in Japan and Hong Kong.

Table 31. Citrus Fruit Import Markets

Significant Products: Total Imports		Japan	Hong Kong	Brunei	Malaysia	Singapore
Oranges	($ mil)	121.7	92.4	2.4	29.8	34.9
Grapefruit and Pomelo	($ mil)	152	[a]	[a]	[a]	[a]
Tang.Mand.Clement.Satsma	($ mil)	[a]	[a]	[a]	[a]	10.7
Lemons and Limes	($ mil)	118.6	[a]	[a]	[a]	[a]
Total Citrus Fruit Imports						
Share of Total Pacific Rim Imports (%)		64.7	18.9	<1	5	8
Share of Total High Value Product Imports (%)		2.8	3.8	2.2	3.4	5.8
U.S. Citrus Fruit Exports						
U.S. Share of Imports (%)		65.6	51.7	1.3	16	15.8
Share of Total U.S. Exports (%)		51.9	12	<1	1	1.5
Share of U.S. Exports to Pacific Rim (%)		75.6	17.4	<1	1.5	2.2
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		6	4	7	14	[b]
1982-1987		21	6	14	7	[b]

[a] Does not meet the high potential import market tests
[b] No volume data were reported for 1987

PacRim *apple* imports totaled $127 million in 1987. Details on the high potential import markets in this region are included in Table 33.

Table 33. Apple Import Markets

Total Imports		Hong Kong	Taiwan	Brunei	Malaysia	Singapore
Apples	($ mil)	36.8	39.4	2	19	28
Total Apple Imports						
Share of Total Pacific Rim Imports (%)		29.1	31	1.6	15	22.1
Share of Total High Value Product Imports (%)		1.2	2	1.7	2	3.4
U.S. Apple Exports						
U.S. Share of Imports (%)		36.7	42.8	<1	16.2	14.3
Share of Total U.S. Exports (%)		14.1	17.5	<1	3.2	4.1
Share of U.S. Exports to Pacific Rim (%)		36	44.8	<1	8.2	10.6
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		5	11	9	2	-5
1982-1987		4	8	14	6	5

During the long-term 1962 to 1987 period, apple imports into the Pacific Rim region expanded at an average rate of 7 percent per year. This has declined nominally to about a 5 percent growth rate during the last 5 years. The most rapid growth has been registered in the small Brunei market, where U.S. presence is minimal. By contrast, the U.S. has gained significant shares in Hong Kong and Taiwan, both relatively large markets. Substantial additional apple exports would be realized if the U.S. could achieve the same 35-40 percent market shares in Malaysia and Singapore, both already reasonably sizable markets.

Grape imports in the PacRim were valued at $60 million in 1987. Three countries meet the test for high potential grape import markets. These are detailed in Table 34, along with U.S. market share data.

Table 34. Grape Import Markets

Total Imports	Hong Kong	Malaysia	Singapore
Grapes ($ mil)	21.9	6.2	14.6
Total Grape Imports			
Share of Total Pacific Rim Imports (%)	36.6	10.4	24.4
Share of Total High Value Product Imports (%)	<1	<1	1.8
U.S. Grape Exports			
U.S. Share of Imports (%)	50.4	19.2	28.7
Share of Total U.S. Exports (%)	10.2	1.1	3.9
Share of U.S. Exports to Pacific Rim (%)	31.9	3.4	12.1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)			
1962-1987	1	7	10
1982-1987	6	3	5

For the region as a whole, grape imports grew at an average annual rate of about 8 percent between 1962 and 1987, but at only a 4 percent annual pace during the latter 5 years of this period. More than 60 percent of the imports are purchased by Hong Kong and Singapore, and both markets show above-average rates of growth in recent years. The U.S. is also quite competitive in these two markets, with 50 percent and 29 percent market shares, respectively. FATUS data also indicate that the U.S. ships more than $11 million of grapes to Taiwan, but CLF data do not report any Taiwanese imports, thus it is not possible to assess the potential to expand U.S. presence in that market.

PacRim imports of *other non-citrus fruits* in 1987 were valued at $922 million, more than 30 percent of all fruit, juice, and nut purchases. Details on the high potential import markets and on U.S. performance in those markets are presented in Table 35.

The compound annual rate of growth in the volume of other non-citrus fruits imported into the Pacific Rim countries during 1962-1987 was 7 percent but fell to 3 percent between 1982 and 1987. Malaysia, Japan, and Brunei all show relatively high rates of growth in recent years. Banana imports to Japan are the largest single item in this category, 40 percent of the total. There appears to be sizable imports of fresh non-citrus fruits other than pears, but neither CLF nor FATUS data allowed identification of specific products.

Table 35. Import Markets for Other Fresh Non-Citrus Fruits

Significant Products: Total Imports		Japan	Hong Kong	Brunei	Malaysia	Singapore
Pears	($ mil)	[a]	29	1.3	7.6	19.1
Other Non-Tropical Fruit	($ mil)	113.7	28	[a]	[a]	[a]
Bananas	($ mil)	370.5	[a]	[a]	[a]	[a]
Other Tropical Fruit	($ mil)	[a]	20.8	[a]	[a]	[a]
Total Other Non-citrus Fruit Imports						
Share of Total Pacific Rim Imports (%)		72.2	15.5	<1	2.1	3.2
Share of Total High Value Product Imports (%)		4.7	4.7	2.6	2.1	3.5
U.S. Other Non-citrus Fruit Exports						
U.S. Share of Imports (%)		11.3	15.4	<1	1.5	5.1
Share of Total U.S. Exports (%)		31.5	9.2	<1	<1	<1
Share of U.S. Exports to Pacific Rim (%)		71.2	20.9	<1	<1	1.4
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		3	3	12	14	3
1982-1987		10	6	8	11	4

[a] Does not meet the high potential import market tests

Raisin imports of the Pacific Rim countries in 1987 were valued at $76 million. Pakistan was the only country where raisins passed the high potential import market tests, but the FATUS data indicated no Pakistanian imports from the U.S. Thus, no detailed data are provided for this product.

Total imports of *processed fruits and juices* into the Pacific Rim were valued at $577 million in 1987, amounting to about 20 percent of all imports in the general fruits, juices, and nuts grouping. Details on the identified high potential import markets are presented in Table 36.

Imports of processed fruits and juices grew at an annual average rate of 9 percent between 1962 and 1987 and held to a nearly steady 8 percent growth rate in the latter, 1982-1987 period. Both Taiwan and Japan have shown high rates of growth in recent years, and the U.S. has achieved respectable shares of these import markets. However, due to

the limits of available data, few specifics on the products contained in this category can be identified.

Table 36. Import Markets for Processed Fruits and Juices

Significant Products: Total Imports		Japan	Hong Kong	Taiwan	Brunei	Malaysia
Fruit Juice	($ mil)	[a]	[a]	[a]	1.5	[a]
Prepared Fruit	($ mil)	260	41.7	12	2.3	10.7
Total Processed Fruit and Juice Imports						
Share of Total Pacific Rim Imports (%)		67.7	18.9	4.1	<1	2.7
Share of Total High Value Product Imports (%)		2.8	3.6	1.2	3.9	1.7
U.S. Processed Fruit and Juice Exports						
U.S. Share of Imports (%)		20.8	13.8	36.3	1.4	13.9
Share of Total U.S. Exports (%)		19.5	3.6	2	<1	<1
Share of U.S. Exports to Pacific Rim (%)		69.1	12.8	7.3	<1	1.9
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		7	4	30	-9	20
1982-1987		13	5	28	[b]	4

[a] Does not meet the high potential import market tests
[b] No volume data were available for 1982

The total value of *nuts* (except almonds and peanuts) imported into the Pacific Rim countries in 1987 was $348 million. The identified high potential import markets within the region for these products are detailed in Table 37, along with performance data on the U.S. in these markets.

The average annual rate of growth in the volume of PacRim imports during the period 1962-1987 was just 1 percent. But this jumped significantly to 13 percent during the latter 5 years. Thus, this would appear to be an important growth market at this point in time.

Chestnut shipments to Japan in 1987 were valued at $68.2 million. This market has experienced accelerated growth over the most recent five years studied. The U.S. has about 12 percent of this market. Shipments of cashews to India and Singapore totaled approximately $54 million in 1987, with Singapore expanding and India contracting in recent years. The U.S. has a negligible share of Indian imports but at least a "foot in the door" in the Singapore market. Most nuts not elsewhere classified appear to be shipped to Hong Kong, where the U.S. has a detectable presence. However, available data do not allow identification of actual species.

Table 37. Import Markets for Nuts (except Almonds and Peanuts)

Total Imports		Japan	Hong Kong	India	Singapore
Chestnuts	($ mil)	68.2	[a]	[a]	[a]
Cashews	($ mil)	[a]	[a]	35	18.8
Other Nuts	($ mil)	[a]	50.9	[a]	[a]
Total Nuts except Almonds and Peanuts Imports					
Share of Total Pacific Rim Imports (%)		49.7	21.4	11.6	9
Share of Total High Value Product Imports (%)		1.2	2.5	2.8	3.7
U.S. Nuts except Almonds and Peanuts Exports					
U.S. Share of Imports (%)		11.8	7.4	<1	6.4
Share of Total U.S. Exports (%)		11	3	<1	1.1
Share of U.S. Exports to Pacific Rim (%)		61.4	16.6	<1	6
Compound Average Annual Rates of Growth in Import Volume (%)					
1962-1987		5	9	48	19
1982-1987		11	7	-5	8

[a] Does not meet the high potential import market tests

Imports of *peanuts* in 1987 were valued at $183 million. Three countries, Hong Kong, Malaysia, and Singapore, met the tests as high potential peanut import markets. These are detailed in Table 38.

Table 38. Peanut Import Markets

Total Imports		Hong Kong	Malaysia	Singapore
Peanuts	($ mil)	23	5.9	25.6
Total Peanut Imports				
Share of Total Pacific Rim Imports (%)		22.1	3.5	15
Share of Total High Value Product Imports (%)		1.3	<1	3.3
U.S. Peanut Exports				
U.S. Share of Imports (%)		<1	5.3	<1
Share of Total U.S. Exports (%)		<1	<1	<1
Share of U.S. Exports to Pacific Rim (%)		1.6	2.2	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)				
1962-1987		-3	19	22
1982-1987		6	1	7

The compound annual growth in volume of PacRim peanut imports during the period 1962-1987 was 7 percent but declined to 5 percent during the period 1982-1987.

More than half of the Pacific Rim peanut imports go to Japan, but this product did not meet the "above average" HVP import test in that country. The U.S. has only a small, 5 percent, market share in the slow-growing Malaysian market and barely detectable shares in the somewhat faster growing Hong Kong and Singapore markets. The latter two, in particular, would appear to offer opportunities for U.S. expansion.

Almond imports into the Pacific Rim were valued at $118 million in 1987. Only one country was identified as a high potential import market, Japan (Table 39).

The average annual rate of growth in the volume of almond imports in the PacRim between 1962 and 1987 was 7 percent. But, all of this growth occurred prior to 1982--since then there has been no expansion in the region as a whole. Japan presents an exception to the regional pattern, however, showing a significant 12 percent average annual growth rate in recent years. This accounts for more than three-fourths of all U.S. shipments to the region and the U.S. has a very dominant, 78+ percent share of Japanese imports.

Table 39. Almond Import Markets

Total Imports	Japan
Almonds ($ mil)	88.3
Total Almond Imports	
Share of Total Pacific Rim Imports (%)	75
Share of Total High Value Product Imports (%)	<1
U.S. Almond Exports	
U.S. Share of Imports (%)	78.6
Share of Total U.S. Exports (%)	14.9
Share of U.S. Exports to Pacific Rim (%)	76.9
Compound Avg. Ann. Rates of Growth in Import Vol. (%)	
1962-1987	4
1982-1987	12

Hides, Skins, and Natural Fiber Products

This is the largest single category of high value product imports into the Pacific Rim countries, accounting for 30 percent of the total. Included are cattle hides, fur skins, wool and mohair, cotton, and other natural fibers.

Imports of *cattle hides* by PacRim countries 1987 totalled $1.5 billion, about 19 percent of all hides, skins, and fiber imports and nearly 6 percent of all HVP purchases in

international markets. Details on the high potential import markets for cattle hides, along with data on U.S. performance in these markets, are presented in Table 40.

The region's average annual rate of growth in cattle hide import volume during the 1962-1987 period was 4 percent, but during the last 5 years of this period, no growth was registered. Korea is a large and apparently rapidly growing market in which the U.S. appears to enjoy a substantial competitive advantage. Japan is also a sizable market, dominated by U.S. supplies, but is declining in volume probably as that country's leather goods industries get moved off-shore to other Asian countries with lower labor costs. The Taiwanese market has shown rapid growth in recent years, and again the U.S. is the dominant supplier. However, the U.S. share trails by roughly 15 percentage points that of Korea and Japan, suggesting that an opportunity may exist to gain an even greater share of this expanding market. New market possibilities would also appear to exist in Hong Kong, a small but fast-growing market where U.S. presence is low in comparison with other high potential markets for cattle hides.

Table 40. Import Markets for Cattle Hides

Significant Products: Total Imports	Japan	S. Korea	Hong Kong	Taiwan
Hides, Wet Salted ($ mil)	443	[a]	32.2	290.9
Hides, Dry Salted ($ mil)	[a]	764.4	[a]	[a]
Total Cattle Hide Imports				
Share of Total Pacific Rim Imports (%)	28.9	49.9	2.1	19
Share of Total High Value Product Imports (%)	3.1	31.3	1	15
U.S. Cattle Hide Exports				
U.S. Share of Imports (%)	75.6	75.7	18.6	60.1
Share of Total U.S. Exports (%)	25.3	43.6	<1	13.2
Share of U.S. Exports to Pacific Rim (%)	30.3	52.4	<1	15.8
Compound Avg. Ann. Rates of Growth in Import Vol. (%)				
1962-1987	-14	21	14	-2
1982-1987	-1	[b]	11	13

[a] Does not meet the high potential import market tests
[b] No volume data for 1982

Imports of *fur skins* in the Pacific Rim during 1987 were valued at $580 million, about 7.5 percent of the categorical total. There are three identified high potential import markets for these goods, which are detailed in Table 41.

Fur skin imports have grown rapidly in recent years, up at an average annual rate of 20 percent in the 1982-1987 period and at a 15 percent rate in the longer term, 1962-1987 period. The three identified markets, Japan, South Korea, and Taiwan, account for nearly all of the region's imports. The U.S. has a 5-7.5 percent share of these markets, and in total they absorb about 12 percent of U.S. fur skin exports. Hong Kong is the

largest and most rapidly growing of these markets, followed closely by Korea. Given that these are sizable markets but only account for a small share of U.S. shipments, it is suggested that there may be a substantial pay-off from additional export marketing efforts targeted to Taiwan and South Korea.

Table 41. Fur Skin Import Markets

Total Imports	Japan	S. Korea	Hong Kong
Fur Skins ($ mil)	119.8	197.3	259.5
Total Fur Skin Imports			
Share of Total Pacific Rim Imports (%)	20.7	34	44.8
Share of Total High Value Product Imports (%)	<1	8	8.6
U.S. Fur Skin Exports			
U.S. Share of Imports (%)	7.5	5.5	5.1
Share of Total U.S. Exports (%)	3.2	3.9	4.7
Share of U.S. Exports to Pacific Rim (%)	26.6	32.2	39.1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)			
1962-1987	-3	20	55
1982-1987	3	[a]	26

[a] No volume data for 1982

In 1987 the PacRim countries imported *other hides and skins* worth $285 million. Details on the identified high potential markets are presented in Table 42.

During the most recent five years examined, annual growth in imports of other hides and skins averaged 7 percent in the region, up from the 25 year average of 4 percent. South Korea is a small but apparently fast-growing market for sheep skins, in which the U.S.A. holds about a 20 percent share. This market accounts for half of all U.S. shipments of hides and skins other than cattle hides and fur skins to the PacRim. The U.S. supplies roughly 10 percent of the larger Taiwanese import market, which also appears to have expanded significantly over the long term. Japan imported approximately $65 million in wet-salted calf skins in 1987, comprising 51.4 percent of the region's imports in this category. But, this market shows no growth in the short run and a declining trend in the longer run. Further, the U.S. share is minuscule. Thus, the Japanese market may not offer as much future potential as those in Korea and Taiwan.

Table 42. Import Markets for Other Hides and Skins

Significant Products: Total Imports	Japan	S. Korea	Taiwan
Calf Skins, Wet-Salted ($ mil)	64.9	[a]	[a]
Sheep Skins, Dry-Salted ($ mil)	[a]	16.5	[a]
Other Hides (except Cattle) ($ mil)	[a]	[a]	54
Total Other Hides and Skins Imports			
Share of Total Pacific Rim Imports (%)	51.4	18.2	22.8
Share of Total High Value Product Imports (%)	2.1	2.1	3.4
U.S. Other Hides and Skins Exports			
U.S. Share of Imports (%)	1.8	19.3	9.3
Share of Total U.S. Exports (%)	2.1	8.1	4.9
Share of U.S. Exports to Pacific Rim (%)	13.4	51.2	31.2
Compound Avg. Ann. Rates of Growth in Import Vol. (%)			
1962-1987	-6	51	79
1982-1987	0	[b]	5

[a] Does not meet the high potential import market tests
[b] No volume data for 1982

Pacific Rim imports of *wool and mohair* in 1987 were valued at $2.2 billion, making up a very significant 8 percent of all HVP in-bound shipments to the region. Seven different countries were identified as high potential import markets for a variety of wool and mohair products. Details on these markets, along with information about U.S. performance therein, are presented in Table 43.

Wool and mohair imports into the Pacific Rim region increased at an annual average rate of 8 percent on a volume basis during the 1962-1987 period. However, in the latter 5 years of this period, the growth rate fell to just 3 percent. Japan is the largest import market for these products, but one that appears to have stagnated in recent years. More rapid growth is exhibited in the other identified high potential markets with China, Korea, and Taiwan particularly notable for both their size and growth rates. Wool, both greasy and scoured, are the major products traded in this group. However, the U.S. is virtually a non-factor in most of these markets and, where it does some exporting, it is on a very small scale. The sheer size of the imported wool markets in these countries, combined with the practically non-existence of the U.S. as a supplier, would seem to present a great challenge to the U.S. sheep industry and one that could result in substantial export gains if strategies for successful market penetration can be established.

Table 43. Import Markets for Wool and Mohair (Part 1)

Significant Products: Total Imports		China	Japan	S. Korea	Hong Kong
Fine Goat Hair	($ mil)	[a]	76.8	[a]	[a]
Hair, Fine Animal	($ mil)	[a]	90.4	36.2	57.9
Wool, Greasy	($ mil)	258.2	448.7	116.1	[a]
Wool, Scoured	($ mil)	285.6	397	105.4	46.3
Total Wool and Mohair Imports					
Share of Total Pacific Rim Imports (%)		24.4	45.7	11.8	4.9
Share of Total High Value Product Imports (%)		34.1	7.3	10.9	3.7
U.S. Wool and Mohair Exports					
U.S. Share of Imports (%)		[b]	<1	[b]	[b]
Share of Total U.S. Exports (%)		[b]	10.3	[b]	[b]
Share of U.S. Exports to Pacific Rim (%)		[b]	68.3	[b]	[b]
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987		12	3	9	21
1982-1987		10	-<1	13	19

[a] Does not meet the high potential import market tests
[b] No Exports were reported from the U.S. by FATUS

Table 43. Import Markets for Wool and Mohair (Part 2)

Significant Products: Total Imports		Taiwan	India	Pakistan
Wool, Greasy	($ mil)	125.6	30	[a]
Wool, Scoured	($ mil)	28.4	8	13.9
Total Wool and Mohair Imports				
Share of Total Pacific Rim Imports (%)		7.4	4.6	<1
Share of Total High Value Product Imports (%)		8.6	7.1	2.3
U.S. Wool and Mohair Exports				
U.S. Share of Imports (%)		<1	1.4	[b]
Share of Total U.S. Exports (%)		1.8	3	[b]
Share of U.S. Exports to Pacific Rim (%)		11.8	19.9	[b]
Compound Avg. Ann. Rates of Growth in Import Vol. (%)				
1962-1987		11	15	14
1982-1987		13	4	14

[a] Does not meet the high potential import market tests
[b] No Exports were reported from the U.S. by FATUS

Imports of *cotton linters* into the PacRim in 1987 were valued at $2.6 billion, nearly 10 percent of all HVP acquisitions from foreign suppliers. Details on the identified high potential import markets for this product are included in Table 44.

Table 44. Cotton Linter Import Markets

Total Imports		Japan	S. Korea	Hong Kong	Taiwan	Malaysia
Cotton Linters	($ mil)	1124.6	514.3	332.1	528.4	41.6
Total Cotton Linter Imports						
Share of Total Pacific Rim Imports (%)		44.3	20	12.9	20.6	1.6
Share of Total High Value Product Imports (%)		8	21	11	27.5	4.5
U.S. Cotton Linter Exports						
U.S. Share of Imports (%)		<1	*	*	<1	*
Share of Total U.S. Exports (%)		32.1	*	*	1.9	*
Share of U.S. Exports to Pacific Rim (%)		94.6	*	*	5.4	*
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		1	5	17	13	3
1982-1987		1	8	5	10	27

* No Exports were reported from the U.S. by FATUS

Annual growth in the volume of cotton linter imports in the region during the 1962-1987 period averaged 4 percent and rose during the last five years of this period to 6 percent. This is another very large market where the U.S. share is almost non-existent. Japan alone is more than a $1 billion market and accounts for nearly all U.S. shipments to the region. But, even so, the U.S. is not a supply factor. South Korea and Taiwan are both half billion dollar markets and growing at impressive rates, again with virtually no U.S. presence. Overall, it would appear that there are several viable markets for cotton lint exports in the Pacific Rim, but that the U.S. is essentially a non-player in these markets.

Imports of *cotton other than linters* in the region in 1987 totaled $29 million. Only one country met the high potential import market test, Taiwan. Details on this market are shown in Table 45.

The compound annual rate of growth in the volume of cotton waste imports into the PacRim was 3 percent between 1962 and 1987 but expanded sharply to 16 percent, on average, during the last five years of this period. Taiwan is the major import market, taking about half of all of the region's in-bound shipments and accounting for most of the region's growth. Available data do not allow calculation of the U.S. share of the Taiwanese market, but this market appears to draw a relatively small share of total U.S. exports compared to its share of total PacRim imports.

Table 45. Import Markets for Cotton other than Linters

Total Imports		Taiwan
Cotton Waste	($ mil)	12.7
Total Cotton excluding Linters Imports		
Share of Total Pacific Rim Imports (%)		49.6
Share of Total High Value Product Imports (%)		<1
U.S. Cotton excluding Linters Exports		
U.S. Share of Imports (%)		[a]
Share of Total U.S. Exports (%)		8.4
Share of U.S. Exports to Pacific Rim (%)		15.4
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987		21
1982-1987		17

[a] Cannot be calculated due to inconsistencies in available data

Imports of *fibers other than cotton* into Pacific Rim countries in 1987 totaled $609 million, nearly 8 percent of the hides, skins, and fiber category total. Several high potential import markets were identified. These are detailed in Table 46.

Table 46. Import Markets for Natural Fibers other than Cotton

Significant Products: Total Imports		Japan	S. Korea	Hong Kong	Taiwan	India	Pakistan
Ramie	($ mil)	115.9	[a]	22.3	14.1	[a]	[a]
Silk, raw and waste	($ mil)	[a]	55.3	74.1	[a]	2.1	[a]
Jute	($ mil)	[a]	[a]	[a]	[a]	[a]	28
Total Fibers excluding Cotton Imports							
Share of Total Pacific Rim Imports (%)		42.9	16.9	19.3	6	8.3	4.7
Share of Total High Value Product Imports (%)		1.9	4.2	3.9	1.9	3.4	3.7
U.S. Fibers excluding Cotton Exports							
U.S. Share of Imports (%)		<1	[b]	[b]	<1	[b]	[b]
Share of Total U.S. Exports (%)		2.6	[b]	[b]	<1	[b]	[b]
Share of U.S. Exports to Pacific Rim (%)		92.3	[b]	[b]	7.7	[b]	[b]
Compound Avg. Ann. Rates of Growth in Import Vol. (%)							
1962-1987		2	27	41	38	-2	18
1982-1987		-2	4	-<1	3	-1	27

[a] Does not meet the high potential import market tests
[b] No Exports were reported from the U.S. by FATUS

PacRim imports of natural fibers other than cotton grew at an annual average pace of just 1 percent between 1962 and 1987 but the rate of growth accelerated markedly during the last 5 years, averaging 8 percent per year. Japan, Hong Kong, and South Korea are the leading markets, together accounting for about 80 percent of the region's purchases. Ramie and silk are the most important import products in these markets, products for which the U.S. is not a supplier. The import market for jute in Pakistan has grown dramatically in recent years, but again this is a product for which the U.S. is an unlikely supplier to world markets.

Vegetables

As a group, vegetable imports into the Pacific Rim countries were valued at $1,939 million in 1987. This amounts to about 7.4 percent of all high-value product in-shipments to the region, ranking ahead of the eggs and dairy product grouping and behind the fruits, juices, and nuts classification. Fresh vegetables, canned vegetables, pulses, and frozen potatoes are the most significant products in this group.

Imports of *fresh vegetables* totaled $328 million. Details on the identified high potential import markets, along with data on U.S. performance in those markets, are presented in Table 47.

Table 47. Fresh Vegetable Import Markets

Total Imports		Japan	Hong Kong	Brunei	Malaysia	Singapore
Fresh Vegetables	($ mil)	177.2	58.3	2.5	11.3	22.9
Total Fresh Vegetable Imports						
Share of Total Pacific Rim Imports (%)		54.3	29.5	<1	5.3	13.9
Share of Total High Value Product Imports (%)		1.3	2.7	2.3	1.9	5.5
U.S. Fresh Vegetable Exports						
U.S. Share of Imports (%)		8.8	13.9	[a]	<1	1.7
Share of Total U.S. Exports (%)		5.8	4.2	[a]	<1	2
Share of U.S. Exports to Pacific Rim (%)		40.8	29.5	[a]	<1	13.9
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		31	-6	12	7	12
1982-1987		12	3	26	2	4

[a] No Exports were reported from the U.S. by FATUS

The average annual rate of growth in import volume of fresh vegetables into the PacRim was 4 percent between 1962 and 1987. During the last five years of this period the growth rate declined to 2 percent. Japan and Hong Kong account for about 70 percent of the region's imports, and the U.S. has achieved a modest market share in both countries. Japan is the largest importer, and has also registered an above-average rate of growth.

Brunei is a small but rapidly expanding market in which the U.S. appears to have little or no presence.

The total value of *prepared or preserved vegetables* (other than canned) imported to the Pacific Rim countries during 1987 was $1.1 billion, nearly 57 percent of all vegetable acquisitions on international markets. A wide variety of products could be identified in this product grouping, with 6 different countries meeting the criteria as high potential import markets for one or more of these products. Detailed information on these markets, along with data on U.S. performance, are shown in Table 48.

The compound average annual rate of growth in PacRim import volume of prepared or preserved vegetables (other than canned) between 1962 and 1987 was 8 percent. During the last five years of this period the growth rate slowed somewhat to a 6 percent annual average. Japan is both the largest single import market for these products in the region and the fastest growing, expanding at an average rate of 16 percent per year since the early 1980's. Japan accounts for about two-thirds of all PacRim imports in this product category and more than three-fifths of U.S. exports to the region.

Table 48. Import Markets for Prepared or Preserved Vegetables (other than Canned)

Significant Products: Total Imports		Japan	Hong Kong	Brunei	Malaysia	Singapore
Vegetable Produce, fresh or dried	($ mil)	106.7	*	*	*	*
Onions, dry	($ mil)	*	*	*	28.2	17.5
Vegetables, dehydrated	($ mil)	103.4	37.4	*	*	16
Mushrooms, dried	($ mil)	*	72.8	*	7.9	21
Vegetables in Temp. Preservative	($ mil)	105.1	*	*	*	*
Other Prepared Vegetables	($ mil)	130.4	*	*	7.4	*
Infant Food	($ mil)	*	*	1.4	7.8	9.8
Total Prepared or Preserved Vegetable Imports, Other than Canned						
Share of Total Pacific Rim Imports (%)		65.8	15.4	<1	5.2	7.5
Share of Total High Value Product Imports (%)		4.9	5.5	3	6	9.6
U.S. Prepared or Preserved Vegetable Exports, Other than Canned						
U.S. Share of Imports (%)		5.7	6	<1	2.3	7
Share of Total U.S. Exports (%)		11.1	2.8	<1	<1	1.6
Share of U.S. Exports to Pacific Rim (%)		61.9	15.4	<1	1.9	8.7
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		8	4	3	5	2
1982-1987		16	5	10	5	3

* Does not meet the high potential import market tests

Other sizable markets are Hong Kong and Singapore, but these are growing at a relatively slow pace while the small Brunei market is second only to Japan in rate of expansion. Overall, the U.S. has a relatively small presence in these markets and they

account for a minor share of U.S. vegetable exports. Thus, it would appear that the potential exists for significant increase in U.S. sales into these markets if the U.S. could increase its share of prepared or preserved vegetable shipments to the PacRim closer to that achieved for high-value products in total.

Imports of *canned vegetables* into Pacific Rim countries during 1987 were valued at $122 million, or about 6 percent of all vegetable purchases. Hong Kong is the only high potential import market that could be identified in the region on the basis of the "above average" tests. This market is detailed in Table 49.

Imports of canned vegetables in the region increased at an 11 percent compound average annual rate during the period 1962 to 1987. But, the growth rate declined to 4 percent during the last five years of this period. Hong Kong accounts for more than half of the region's total imports, with canned mushrooms as the major identifiable product. This is a rapidly expanding product market in which the U.S. is a minor supplier.

Table 49. Canned Vegetable Import Markets

Significant Products: Total Imports		Hong Kong
Canned Mushrooms	($ mil)	20.9
Other Canned Vegetables	($ mil)	47.2
Total Canned Vegetable Imports		
Share of Total Pacific Rim Imports (%)		55.8
Share of Total High Value Product Imports (%)		2.3
U.S. Canned Vegetable Exports		
U.S. Share of Imports (%)		8.9
Share of Total U.S. Exports (%)		5.4
Share of U.S. Exports to Pacific Rim (%)		12.1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987		6
1982-1987		14

Total imports of *frozen potatoes* in the region during 1987 were valued at $85 million. Only one high potential import market was identified, Japan. This is detailed in Table 50.

Table 50. Frozen Potato Import Markets

Total Imports		Japan
Frozen Potatoes	($ mil)	85.2
Total Frozen Potato Imports		
Share of Total Pacific Rim Imports (%)		99.3
Share of Total High Value Product Imports (%)		<1
U.S. Frozen Potato Exports		
U.S. Share of Imports (%)		73.4
Share of Total U.S. Exports (%)		75.7
Share of U.S. Exports to Pacific Rim (%)		87.3
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987		[a]
1982-1987		21

[a] No 1982 data were available

Frozen potatoes imports in the PacRim increased at a compound annual rate averaging 21 percent during the 1982 to 1987 period. Nearly all imports go to Japan, where the U.S. supplies nearly three-fourths of the import market. This country accounts for most of the PacRim market and nearly all U.S. exports to the region.

The region's imports of *pulses* in 1987 were valued as $339 million, about 17.5 percent of all vegetable import purchases. Five high potential import markets for one or more products in this class were identified. These are detailed in Table 51.

The compound annual rate of growth in the volume of pulse imports into the Pacific Rim countries during the period 1962-1987 averaged 5 percent. In the most recent five year period, the market has expanded at a somewhat faster, 7 percent average annual pace. India is the largest importer in the region, at $122 million taking nearly 40 percent of the PacRim total. India is also the most rapidly expanding import buyer. The U.S. has about 6 percent of this market, its largest share of any market in the region. The only other rapidly growing importer is Pakistan. However, the U.S. has not taken advantage of the growth in that market.

Table 51. Import Markets for Pulses

Significant Products: Total Imports	Hong Kong	India	Pakistan	Malaysia	Singapore
Peas, dry ($ mil)	a	a	13.3	a	a
Lentils ($ mil)	a	24	a	a	a
Beans, dry ($ mil)	20.9	22	9.6	15.5	10.7
Other Pulses ($ mil)	a	71	7.6	a	a
Total Pulses Imports					
Share of Total Pacific Rim Imports (%)	12.4	37.5	9.8	6.9	3.9
Share of Total High Value Product Imports (%)	1.4	8.7	4.2	2.5	1.6
U.S. Pulses Exports					
U.S. Share of Imports (%)	1.5	5.7	<1	1.9	2.5
Share of Total U.S. Exports (%)	<1	3.4	<1	<1	<1
Share of U.S. Exports to Pacific Rim (%)	2.8	31.6	<1	1.9	1.5
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987	5	39	-2	6	2
1982-1987	1	26	22	2	4

[a] Does not meet the high potential import market tests

Processed Grain Products

Imports of *processed grain products* by Pacific Rim countries in 1987 totaled to $237 million. This is the smallest of the high-value product categories, accounting for less than 1 percent of all HVP imports in the region. Only three specific products could be identified in this category: pastry, macaroni, and breakfast cereals. Four countries met the high potential import market tests. These are detailed in Table 52.

The compound annual rate of growth in the volume of processed grain products imported by Pacific Rim countries during the period 1962-1987 was 5 percent, but the growth rate declined to just 2 percent per year, on average, during the last 5 years of this period. Hong Kong and Singapore are the largest importers of products in this category, primarily importing pastry and macaroni. The U.S. has rather small shares of these markets. However, the FATUS categorization of data in the product class is rather nebulous, therefore the U.S. market share data may not be accurate. Brunei is a surprisingly significant importer, given its relatively small size, and has been expanding at a very rapid pace in recent years. Given the unimpressive U.S. presence here, this may represent a market opportunity that has been largely overlooked to date.

Table 52. Import Markets for Processed Grain Products

Significant Products: Total Imports		Hong Kong	Brunei	Malaysia	Singapore
Pastry	($ mil)	29	4.1	[a]	20.7
Macaroni	($ mil)	30.7	1.5	7.7	[a]
Breakfast Cereals	($ mil)	[a]	1.2	[a]	[a]
Total Processed Grain Product Imports					
Share of Total Pacific Rim Imports (%)		26.6	3.1	7.2	14.3
Share of Total High Value Product Imports (%)		2.1	6.4	1.9	4
U.S. Processed Grain Product Exports					
U.S. Share of Imports (%)		2.4	<1	1.6	5.6
Share of Total U.S. Exports (%)		1.2	<1	<1	1.5
Share of U.S. Exports to Pacific Rim (%)		6.7	<1	1.2	8.6
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987		3	7	-12	-6
1982-1987		9	18	1	1

[a] Does not meet the high potential import market tests

Sweeteners, Confectionery, Spices, and Beverages

This category includes a wide variety of high-value products that are classified together primarily for ease of presentation. As a group, total imports into Pacific Rim countries in 1987 were valued at $4.6 billion, or roughly 18 percent of all HVP in-shipments. This trails only the hides, skins, and fiber products category in terms of total import value.

Total imports of *sugar and related products* by countries in the region during 1987 were valued at $1.6 billion. Nine countries were identified as high potential import markets for one or more sugar-related product. Details on these markets are presented in Table 53.

The region's compound average annual rate of growth in sugar and related product imports between 1962 and 1987 was 4 percent. During the last 5 years of this period the rate of growth increased to 6 percent. This category contains sugar confectionery, refined sugar, and raw centrifugal sugar. There are several sizable markets for these imported products, led by Japan, China, and India. However, the U.S. has a very low presence in all of these markets except Japan, which accounts for nearly 80 percent of all U.S. shipments of sugar and related products into the PacRim. India is an exceptionally fast-growing market for refined sugar, a product that the U.S. apparently does not export to these international markets. Korea and Pakistan are also relatively fast-growth markets, the former for raw sugar and the latter for refined sugar. Given that the U.S. has achieved a

detectable market presence in the raw sugar markets in Japan and China, this suggests that Korea may be an untapped export opportunity for the U.S. raw sugar industry.

Table 53. Import Markets for Sugar and Related Products (Part 1)

Significant Products: Total Imports		China	Japan	S. Korea	Hong Kong	India
Sugar Confectionery	($ mil)	[a]	[a]	[a]	37.2	[a]
Refined Sugar	($ mil)	[a]	[a]	[a]	42.9	227
Sugar (centrifugal, raw)	($ mil)	285.1	288.2	186.4	[a]	[a]
Total Sugar and Related Product Imports						
Share of Total Pacific Rim Imports (%)		17.9	25.9	11.9	5.9	14.3
Share of Total High Value Product Imports (%)		17.8	2.9	7.8	3.1	15.6
U.S. Sugar and Related Product Exports						
U.S. Share of Imports (%)		5.5	18.4	<1	2.3	[b]
Share of Total U.S. Exports (%)		2.3	10.9	<1	<1	[b]
Share of U.S. Exports to Pacific Rim (%)		16.4	79	<1	2.3	[b]
Compound Avg. Ann. Rates of Growth in Import Vol. (%)						
1962-1987		-3	-4	10	10	114
1982-1987		2	1	13	0	59

[a] Does not meet the high potential import market tests
[b] No exports were reported from the U.S. by FATUS

Table 53. Import Markets for Sugar and Related Products (Part 2)

Significant Products: Total Imports		Pakistan	Brunei	Malaysia	Singapore
Sugar Confectionery	($ mil)	[a]	1.2	[a]	14.5
Refined Sugar	($ mil)	160.2	2.8	[a]	14.2
Sugar (centrifugal, raw)	($ mil)	[a]	[a]	132.5	29.2
Total Sugar and Related Product Imports					
Share of Total Pacific Rim Imports (%)		10.4	<1	8.7	3.9
Share of Total High Value Product Imports (%)		21	3.7	15	7.5
U.S. Sugar and Related Product Exports					
U.S. Share of Imports (%)		<1	<1	<1	<1
Share of Total U.S. Exports (%)		<1	<1	<1	<1
Share of U.S. Exports to Pacific Rim (%)		<1	<1	<1	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987		186	-2	9	8
1982-1987		10	4	5	2

[a] Does not meet the high potential import market tests

Coffee imports into the Pacific Rim countries during 1987 were valued at $988 million, second only to sugar and related products. Three markets met the high potential import market tests. Relevant information is presented in Table 54.

Table 54. Coffee Import Markets

Significant Products: Total Imports		Japan	S. Korea	Malaysia
Coffee Extracts	($ mil)	115.3	[a]	20.9
Coffee, green	($ mil)	723.8	62.9	10
Total Coffee Imports				
Share of Total Pacific Rim Imports (%)		85.8	6.4	3.1
Share of Total High Value Product Imports (%)		6	2.6	3.4
U.S. Coffee Exports				
U.S. Share of Imports (%)		2	<1	1.2
Share of Total U.S. Exports (%)		19.6	<1	<1
Share of U.S. Exports to Pacific Rim (%)		57.3	<1	1.3
Compound Avg. Ann. Rates of Growth in Import Vol. (%)				
1962-1987		8	20	-3
1982-1987		12	[b]	-1

[a] Does not meet the high potential import market tests
[b] No volume data were available for 1982

The compound average annual rate of growth in the volume of coffee imports into the Pacific Rim between 1962 and 1987 was 10 percent. During the latter 5 years of this period the growth rate fell to 7 percent. Japan is the principal importer, with over 85 percent of the region's total, and has been expanding at a well-above average rate. Surprisingly, the U.S. supplies about 2 percent of that market, which accounts for about one-fifth of all U.S. coffee exports worldwide. South Korea appears to be a rapidly-growing coffee market and may present some expansion opportunities for U.S. exporters.

Cocoa imports in the Pacific Rim were valued at $224 million in 1987. Two countries, China and Japan, were identified as high potential import markets. These are detailed in Table 55.

Pacific Rim cocoa imports on a volume basis grew at an average annual rate of 4 percent between 1962 and 1987 but were essentially unchanged during the final 5 years of that period. Japan is the major importer, followed by China. Together, they account for more than 90 percent of the region's total cocoa in-shipments. Not surprisingly, the U.S. is only a small supplier of cocoa, with Japan as the principal buyer.

Table 55. Cocoa Import Markets

Significant Products: Total Imports	China	Japan
Cocoa Beans ($ mil)	39.1	90.2
Total Cocoa Imports		
Share of Total Pacific Rim Imports (%)	18.6	71.8
Share of Total High Value Product Imports (%)	2.6	1.1
U.S. Cocoa Exports		
U.S. Share of Imports (%)	<1	<1
Share of Total U.S. Exports (%)	<1	10.4
Share of U.S. Exports to Pacific Rim (%)	<1	74.4
Compound Avg. Ann. Rates of Growth in Import Vol. (%)		
1962-1987	-6	0
1982-1987	7	3

Total PacRim *chocolate* imports in 1987 were valued at $209 million. Table 56 contains details on the high potential import markets for chocolate products as well as data on U.S. performance in those markets.

Table 56. Chocolate Import Markets

Total Imports	Japan	Hong Kong	Brunei
Chocolate Products ($ mil)	152.9	40.9	1.8
Total Chocolate Imports			
Share of Total Pacific Rim Imports (%)	73.1	19.5	<1
Share of Total High Value Product Imports (%)	1	1.4	1.5
U.S. Chocolate Exports			
U.S. Share of Imports (%)	19.2	16.6	<1
Share of Total U.S. Exports (%)	34.9	8	<1
Share of U.S. Exports to Pacific Rim (%)	68.9	15.9	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)			
1962-1987	11	7	22
1982-1987	19	8	[a]

[a] No 1982 data volume data were available

The compound average annual rate of growth in volume of chocolate imports in the region was 15 percent during the period from 1962 to 1987. This declined to 11 percent during the last five years of the period. Japan and Hong Kong make up approximately 93

percent of the PacRim chocolate import market; Japan is the largest and most rapidly expanding market. The U.S. supplies about 19 percent of Japan's imports and 17 percent in Hong Kong, and these two countries account for more than 40 percent of all U.S. chocolate product exports.

Imports of *tea and mate* in the Pacific Rim during 1987 were valued at $334 million. Details on the identified high potential import markets for tea are shown in Table 57.

Table 57. Import Markets for Tea

Total Imports	China	Japan	Hong Kong	Pakistan	Malaysia
Tea ($ mil)	16	105.8	47.7	153.6	8.2
Total Tea Imports					
Share of Total Pacific Rim Imports (%)	4.8	31.7	14.3	46	2.5
Share of Total High Value Product Imports (%)	<1	<1	1.6	19.5	<1
U.S. Tea Exports					
U.S. Share of Imports (%)	[a]	3.6	1.3	[a]	4.1
Share of Total U.S. Exports (%)	[a]	25.2	4.2	[a]	2.2
Share of U.S. Exports to Pacific Rim (%)	[a]	77.8	13	[a]	6.9
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987	19	5	-2	6	1
1982-1987	13	13	7	8	2

[a] FATUS reported no exports in this category

The compound annual rate of growth in the volume of tea and mate imports to the region was 8 percent between 1962 and 1987. During the latter five years this increased to 10 percent. Pakistan and Japan are the largest importers; China and Japan the most rapidly expanding. The U.S. has minor market shares in both Japan and Malaysia, with Japan accounting for most of the U.S. shipments to the region.

Spice imports in the Pacific Rim during 1987 were valued at $298 million. Malaysia was the only country that met the high potential import market tests. Details are shown in Table 58.

The average annual rate of growth in the volume of spice imports in the region between 1962 and 1987 was 5 percent. During the 1982-1987 period the growth rate dropped to 2 percent. Malaysia takes just 16 percent of the region's total, and the U.S. is essentially not a supplier to this market. This seems an unlikely product for much additional U.S. export activity.

Table 58. Spice Import Markets

Significant Products: Total Imports	Malaysia
Garlic ($ mil)	15.8
Pimento, Allspice ($ mil)	14
Total Tea Imports	
Share of Total Pacific Rim Imports (%)	15.9
Share of Total High Value Product Imports (%)	5.2
U.S. Tea Exports	
U.S. Share of Imports (%)	<1
Share of Total U.S. Exports (%)	<1
Share of U.S. Exports to Pacific Rim (%)	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)	
1962-1987	8
1982-1987	2

Total Pacific Rim imports of *beverages excluding juices and wines* were valued at $793 million in 1987, amounting to 3 percent of all HVP imports into the region. A number of high potential import markets were identified within the region, mostly for distilled alcoholic beverages. These are detailed in Table 59.

Table 59. Import Markets for Beverages (excluding Juices and Wines)

Significant Products: Total Imports	Japan	Hong Kong	Taiwan	Brunei	Malaysia
Distilled Alcoholic Beverages ($ mil)	396.2	162.3	47.8	[a]	45.6
Non-alcoholic Beverages ($ mil)	71	[a]	[a]	11.4	[a]
Total Beverage Imports, excluding juices and wines					
Share of Total Pacific Rim Imports (%)	60.6	22.4	6.3	1.5	5.9
Share of Total High Value Product Imports (%)	3.9	5.9	2.6	10.4	5
U.S. Beverage Exports, excluding juices and wines					
U.S. Share of Imports (%)	3	7.4	11.8	[c]	<1
Share of Total U.S. Exports (%)	20.4	18.8	8.4	[c]	<1
Share of U.S. Exports to Pacific Rim (%)	42.2	38.9	17.5	[c]	<1
Compound Avg. Ann. Rates of Growth in Import Vol. (%)					
1962-1987	18	17	6	22	77
1982-1987	22	10	[b]	35	17

[a] Does not meet the high potential import market tests
[b] No 1982 volume data
[c] No Exports were reported from the U.S. by FATUS

The import volume of beverages (excluding juices and wines) by PacRim countries between 1962 and 1987 grew at an average annual rate of 17 percent, accelerating to a 33 percent annual growth rate during the latter 5 years. Japan and Hong Kong are the two leading importers, mostly of distilled alcoholic beverages, together accounting for more than 80 percent of the region's total in-shipments. Brunei is a relatively small but fast-growing market, mainly for non-alcoholic beverages. U.S. shipments in this region go primarily to Japan, Hong Kong, and Taiwan.

Total imports of *wine* into the Pacific Rim countries in 1987 were valued at $185 million. Details on identified high potential import markets in the region are presented in Table 60.

Annual growth in the volume of wine imports in the Pacific Rim during the 1962-1987 period averaged 16 percent. By the last 5 years of this period the growth rate had declined by half, to 8 percent. Japan is the largest and most rapidly-growing import market, drawing nearly three-fourths of all PacRim wine imports. It also accounts for more than 70 percent of all U.S. wine shipments to the region, and the U.S. supplies about 9 percent of the Japanese imports. Brunei is a small but rapidly expanding market, where no U.S. presence is reported.

Table 60. Wine Import Markets

Total Imports	Japan	Hong Kong	Brunei	Singapore
Wine ($ mil)	135.8	23.5	1.2	10
Total Wine Imports				
Share of Total Pacific Rim Imports (%)	73.6	12.7	<1	5.4
Share of Total High Value Product Imports (%)	<1	<1	<1	1.2
U.S. Wine Exports				
U.S. Share of Imports (%)	9.1	4.4	[a]	2.7
Share of Total U.S. Exports (%)	21.6	1.8	[a]	<1
Share of U.S. Exports to Pacific Rim (%)	70.5	5.9	[a]	1.6
Compound Avg. Ann. Rates of Growth in Import Vol. (%)				
1962-1987	7	9	6	1
1982-1987	24	4	17	8

[a] No Exports were reported from the U.S. by FATUS

Manufactured Tobacco Products

Manufactured tobacco products imported into the Pacific Rim countries in 1987 were valued at $1.1 billion. This equals 4 percent of all high value product imports in the region, ranking ahead of the processed grain products, live animals, and eggs and dairy

products categories. These imports have increased at an average annual rate equivalent to 6 percent over the 25 year, 1962 to 1987 period but by a very significant 19 percent during the most recent 5 year period. Thus, this potentially represents an important region for U.S. export activities. However, limits on available data precluded application of the high potential import market tests, nor were U.S. market share data available on a country by country basis.

Summary: High-Profile Pacific Rim Markets

The preceding analysis resulted in 356 specific product/country combinations that met our tests as high potential import markets for high value agricultural products. While this represents a substantial reduction from the more than 1300 possible product and country combinations that exist among the Pacific Rim countries, it still leaves a nearly overwhelming number of alternatives to be considered for further market development by U.S. exporters.

In order to identify a small number of markets from this set of 356, two additional (arbitrary) selection rules were imposed: (1) product/country combinations where the total value of imports (1987 basis) exceeded $250 million, and (2) combinations where the U.S. share of total imports (1987 value basis) was at least 25 percent. The "high profile" markets that meet either or both of these selection rules are shown in Table 61.

Table 61. High Profile Import Markets for High Value Products in PacRim Countries (Part 1)

Product Class	Country	Volume ($ mil.) 1987	U.S. Market Share (%) 1987
Poultry Meat	Japan	324	26.6
	Hong Kong	*	57.2
Cattle Hides	South Korea	764	75.5
	Japan	443	75.6
	Taiwan	291	60.1
Processed Fruits/Juices	Japan	260	*
	Taiwan	*	36.3

Table 61. High Profile Import Markets for High Value Products in PacRim Countries (Part 2)

Product Class	Country	Volume ($ mil.) 1987	U.S. Market Share (%) 1987
Soybean Oil	India	463	[a]
	Pakistan	[a]	88.0
Cotton Linters	Japan	1,125	[a]
	Taiwan	528	[a]
	South Korea	514	[a]
	Hong Kong	332	[a]
Wool	China	544	[a]
	Japan	449	[a]
Sugar	Japan	288	[a]
	China	285	[a]
Tallow	Pakistan	[a]	64.0
	South Korea	[a]	57.6
Citrus Fruit	Japan	[a]	65.6
	Hong Kong	[a]	51.7
Grapes	Hong Kong	[a]	50.4
	Singapore	[a]	28.7
Apples	Taiwan	[a]	42.8
	Hong Kong	[a]	36.7
Coffee	Japan	724	[a]
Cattle Offals (edible)	Japan	404	[a]
Distilled Beverages	Japan	396	[a]
Bananas	Japan	371	[a]
Fur Skins	Hong Kong	260	[a]
Rapeseed Oil	India	250	[a]
Almonds	Japan	[a]	78.6
Frozen Potatoes	Japan	[a]	73.4
Variety Meats	Japan	[a]	31.9

[a] Does not meet the dollar value or market share test

A total of eight countries and 20 product categories met the high profile market tests, creating a total of 34 combinations. Four product/country combinations (poultry meat in Japan, and cattle hides in South Korea, Japan, and Taiwan), met both the dollar volume and U.S. market share tests. Products that met the dollar value test in at least one PacRim country, but not the U.S. market share test, include cotton linters, wool, sugar, coffee, cattle offals, distilled beverages, bananas, fur skins, and rapeseed oil. Products that met the U.S. market share test, but not the dollar volume criterion include tallow, citrus fruit, grapes, apples, almonds, frozen potatoes, and variety meats. Additionally two product groups, processed fruits and juices and soybean oil, met the dollar volume test in one country and the market share test in another. These markets would appear to be likely targets for export development efforts by U.S. firms.

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Export Promotion Effectiveness for Agricultural Products

*John P. Nichols**

Foreign market development programs have expanded greatly in recent years. Spurred on by growing export demand and U.S. production capacity in the 1970s, exports of agricultural commodities grew at an unprecedented rate. The growth in these markets was too great to be sustained under any reasonable economic circumstances. So the bubble burst in the 1980s and the reality of digging and scratching for markets set in. Figures 1 and 2 illustrate the roller-coaster ride for agricultural exports in the 1970s and 1980s (Williams, 1989).

Worldwide recession and major shifts in exchange rates caused a serious decline in both volume and dollar value of U.S. agricultural exports. Aggressive marketing efforts by competitors also contributed to this decline. Policy makers and industry organizations turned their attention to the fundamentals of our global agricultural trade position, price competitiveness, and a proactive market development effort.

Marketing Fundamentals

The fundamentals have been addressed in recent years. The 1985 Farm Bill created mechanisms to compete more effectively on a price basis in international markets. On-going negotiations in the GATT and bi-lateral agreements such as the U.S. - Canada free trade agreement are addressing the reduction of trade barriers. Market development activities have received a substantial boost through the Targeted Export Assistance (TEA) program operated by the Foreign Agriculture Service (FAS) of USDA under the 1985 Farm Bill.

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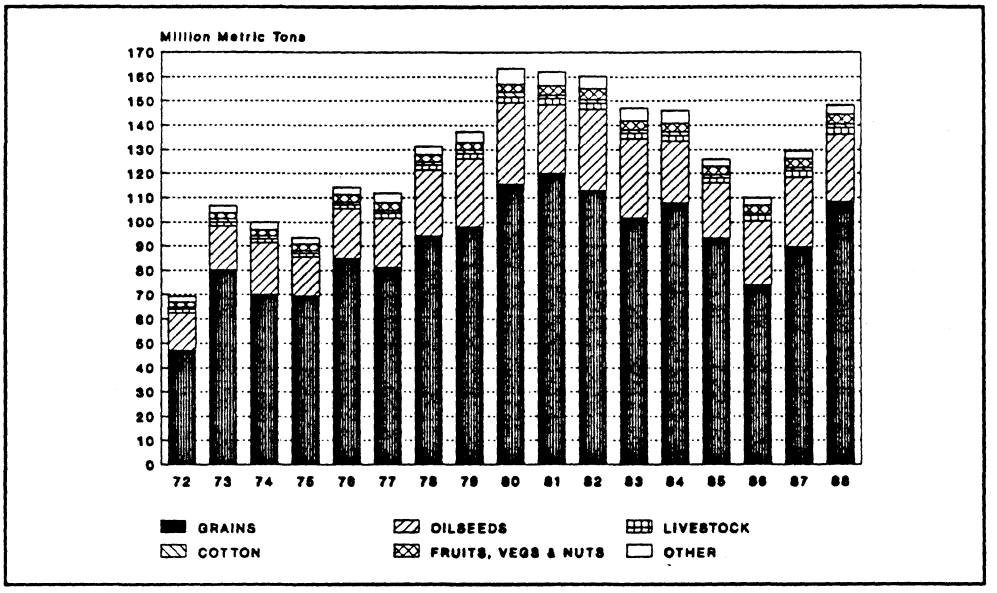

Figure 1. Volume of U.S. Agricultural Exports by Commodity, Fiscal Years 1972-88.

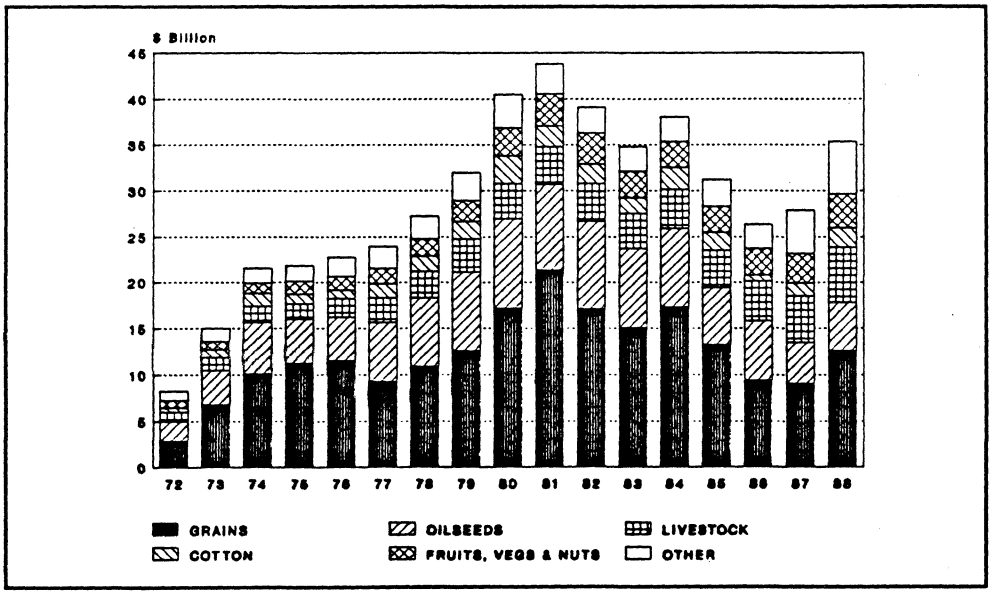

Figure 2. Value of U.S. Agricultural Exports by Commodity, Fiscal Years 1972-88.

The effectiveness of non-price competitive aspects of market development are the focus of discussion in this paper. Through the TEA program and other generic export promotion efforts of commodity interest groups, greater attention must be given to key marketing management concepts. Reducing prices and eliminating trade barriers can help sell product, but long-run success still depends on knowledge of markets, understanding competitors, and effective market organization. This knowledge of markets includes an understanding of product characteristics and how these products are used, distribution channels, and pricing arrangements. Promotion efforts will achieve maximum effectiveness as part of the marketing mix only if these other components are effectively understood and managed.

Effectiveness: What is it?

With the advent of increased export promotion activities for agricultural commodities and high-value products, questions are being raised more frequently concerning effectiveness. These questions are raised by program managers and those charged with oversight and administration of public programs supporting generic and targeted export development efforts. Commodity organizations and FAS are important participants in management and program execution. Issues of evaluation and effectiveness are receiving greater attention.

While the need for, and interest in, studies of effectiveness is evident, there are relatively few examples of controlled studies of export promotion effectiveness. It's not hard to find reasons for this. Advertising and market promotion activities appeal to a complex set of human emotions and decisions. Sorting out and isolating the effects of a specific activity is a difficult process. Promotion efforts are believed to provide returns over an often indefinite period of time, thus introducing the complexity of measuring response well after the application promotion inputs. These problems are well known limitations to the study of promotion effectiveness in domestic marketing circumstances. When one attempts to make similar assessments in foreign markets, these complexities are magnified and new problems arise. Data availability, effects of changing exchange rates, and the effects of export and import regulations and policies are examples.

Effectiveness measurement is simply one part of the marketing management process. Any managerial undertaking should include an evaluation and control phase. Effectiveness of export promotion programs can be assessed on two levels. First, some measure of gross response may be of interest. What return has been achieved per dollar invested? What is the aggregate change in sales (exports) as a result of the promotion activity? These are examples of indicators used to gain some general knowledge of program or activity effectiveness.

Most managerial assessments, however, need to go beyond this level to a question of relative effectiveness. Managers need to know which alternative promotion activity is "best" or achieves the greatest response. Allocation of fixed promotion resources are typically made among markets, among types of activities, and over time. An understanding

of relative effectiveness and some sense of effectiveness at the margin is needed to guide management decisions. It is sometimes argued that this is more an art than a science, but there is no question that decision-making could be improved if better information were available regarding effectiveness of key export promotion strategies.

Studies of Effectiveness in Domestic Markets

Generic advertising and promotion effectiveness have been the focus of studies in U.S. markets for nearly fifty years. Generic commodity promotion expenditures are approaching $500 million annually. Many empirical studies have focused on the advertising component of the marketing mix. Theoretical constructs and data availability have encouraged this focus because better empirical tests could be derived. Other dimensions of market development strategies are more qualitative in concept and are less conducive to traditional market experimentation or econometric techniques, although some studies of merchandising, in-store promotions, and couponing have been done.

The dairy industry is one example where extensive evaluation has been undertaken. A study completed at Cornell in 1975 estimated a 2 to 1 ratio of net returns to advertising costs for milk in New York City (Thompson and Eiler, 1975). A recent study of U.S. cheese promotion and markets estimated an increase in sales of 114 billion lbs. from 1984 through 1987 resulting from generic promotion efforts (Blaylock and Blisard, 1988).

Citrus is another industry where generic promotion efforts have been the subject of many evaluation studies. In an overview of this work, several general observations were made (Lee, 1983). Positive influences on sales from both generic and branded advertising were documented. Carryover effects of up to 15 months were found. In another interesting point it was concluded that there should be an even distribution of advertising over quarters of the year.

These results are presented here simply to indicate that research has been successful in documenting the response to generic promotion programs in some domestic markets. Next we will look at what studies have found for similar programs focusing on export market development efforts.

Export Promotion Effectiveness

The need for evaluation of export promotion activities is the same as in domestic markets, but the problems, as indicated previously, are many. Typical export market development efforts by commodity groups include activities of three types: (1) trade servicing, (2) technical assistance, and (3) consumer promotion.

Trade servicing refers to a multitude of activities targeted at the trade and designed to achieve awareness and adoption of the product by importers, wholesalers, dealers, or

industrial users. Examples include trade show participation, special meetings and conferences, public relations, trade incentives, food service promotion, and other merchandising activities aimed at market channel participants.

Technical assistance refers to an array of activities, also aimed at the trade, but which provide more specific technical help. Activities in this group include assistance on product formulation and use, processing guidelines, facilities development, providing consultants, or doing technical research.

Consumer promotion includes all those activities designed to directly influence consumer decision-making regarding purchase and use. Activities of this type include paid media advertising, point-of-purchase advertising, development and distribution of recipes, and the demonstration of products in retail stores.

Analysis of effectiveness is complicated by the qualitative nature of many of these export promotion activities. Quantifying the level of expenditures for specific activity, the duration of the activity, and correlating each with measurable results is a difficult task. Many of the published studies measured effects associated with an aggregate set of activities so that broad conclusions can be drawn. While this may help in explaining programs to producer groups and others, these types of studies may only give limited insight into specific allocation problems facing export promotion program managers. Results from several published studies are presented as examples of what has been done.

Citrus Cooperator Programs in Europe

As with domestic markets, the Florida citrus industry has lead the way in economic assessment of generic promotion efforts in export markets as well. A series of studies conducted over the period from 1969 through 1983 examined the returns from programs conducted under the FAS cooperator program in Europe (Lee, 1985). The 1977 study estimated that frozen concentrated orange juice (FCOJ) additional export revenue averaged about $1.33 per dollar invested for all partners in the cooperator program. Returns to Florida processors alone amounted to $4.29 per dollar invested.

In 1979 this analysis was updated. Returns per dollar invested over the 1972 to 1977 period were estimated to be $4.85 and $14.97 for all contributors and Florida citrus processors, respectively. Further analyses indicated that, in terms of marketing a given amount of FCOJ, export promotion was 2 to 4 times less expensive than price discounting (Lee, Myers, and Forsee, 1979).

Updated again in 1983, returns over the period 1972 to 1982 were estimated for all program contributors to average $5.51 per dollar invested. Disaggregated to a country level, returns were found to vary from $2.30 to $6.80 per dollar invested.

Soybean Cooperator Program

Another well-documented study of export promotion effectiveness examined the soybean cooperator program over the 1970 to 1980 period (Williams, 1985). This econometric study attempted to identify and isolate the effects of expenditures made to develop export markets during this period. While the results are sensitive to model formulation and several key assumptions, the study incorporates the supply response linkage which is often not included in assessments of effectiveness of demand shifting strategies.

Several results are important. Over the study period returns to all contributors were estimated to be $62 of increased gross receipts per dollar invested. Gross returns at the producer level increased $58 per dollar invested, while net returns at the producer level were estimated to be $14.

From an allocation point-of-view it was found that returns per dollar were higher in European markets when compared with other regions. Another important observation was that the U.S. program had a positive, though much smaller, impact on exports of soybeans from Brazil. Generic promotion programs can have an unintended benefit for other producing regions.

Other Commodity Studies

Similar estimates of response to export promotion have been obtained for other commodities. A study of Cotton Council International's promotion for cotton in Japan from 1979 through 1983 examined response to consumer advertising for cotton products (Beach and Deariso). They estimated that the sale of U.S. cotton increased approximately $17 per dollar spent by FAS.

A 1986 study by Rosson, Hammig, and Jones estimated response to export promotion for several commodities. They estimated a response of $60 increase in export sales of apples associated with one dollar increase in promotion over the period from 1974 through 1981. Tobacco exports were estimated to increase $31 per dollar of export promotion.

The estimates of impact discussed above are examples of the level of response which might be expected. It is certainly useful to know that substantial increases in export sales can be obtained through promotion and market development efforts. However, it is also important to recognize that most of these estimates are gross averages which mask a great deal of variation related to time, country or region, and level of expenditures. Average responses at low levels cannot automatically be projected to apply at higher levels of expenditure. Nonetheless, there is evidence from many commodities, under a variety of circumstances, that export promotion efforts will achieve important positive responses for commodity and producer groups.

Managerial Needs

Only a few of the studies cited above contribute to the issue of improving export promotion programs. Comparison of alternatives is the key to improved program management. Simple averages don't tell the story in sufficient detail. Response rates at different levels of expenditure, for different types of promotion activity, or in different markets are provided in only a few published studies.

For intensive managerial needs, more refined tests are required. Some effort must be expended in designing simple experiments, controlling other important factors, and collecting data on all important variables. This is neither easy nor inexpensive, but if program managers are to learn from their experience (and the experiences of others), then planning for data collection and market analysis is crucial at the early stages of program development. There is a certain "art" to the market development process but that can be aided by improved information gained through market research.

Influences on Market Development Strategies

Selecting among competing strategies in export market development is a major management task. How can these decisions be improved? In addition to greater emphasis on specifically designed market tests as discussed above, it is important to have a conceptual understanding of primary influencing factors. These may be viewed in three different dimensions: (1) product or commodity type, (2) level of economic development of target market, and (3) degree of market penetration.

Product/Commodity Type

Agricultural exports may be classified into three groups, somewhat related to value per unit and degree of processing. Bulk commodities such as grains and oilseeds represent by far the largest tonnage of U.S. exports. High value commodities may be thought of as including meat, grain, and oilseed products and other types of intermediate bulk products derived from raw agricultural commodities. Specialty crops and finished products form the third group. These include consumer packaged foods and such items as horticultural crops.

In some ways these can be viewed as a continuum from low value, unprocessed bulk commodities on the one end, to the most highly processed, high value consumer products on the other end. One would expect the effectiveness of different promotion strategies to vary widely across this continuum.

Level of Economic Development

The amount of consumer discretionary income in the market is certainly another important factor. The "sophistication" of the market, its channels of distribution, and consumer preferences is correlated with level of economic development. Effectiveness of market development and promotion activities will vary greatly across economic development levels. More emphasis on consumer advertising would be expected in markets with substantial discretionary consumer income while technical assistance for bulk commodities might be more widely used in markets at an earlier stage of economic development.

Degree of Market Penetration

This is a measure of the relationship to competitors in the market (Williams, 1988). If there are few effective competitors, then market development activities would be designed to shift demand for the basic commodity or category of products such as feed grains or all meat. If, however, there are strong potential suppliers of competing commodities, then emphasis would be given to those activities which differentiate and shift demand for commodities by specific type (rice as distinct from food grains). At a higher level of competition, activities must be designed to distinguish specific sources or brands and shift demand at that level (U.S. long-grain rice, Washington apples, etc.).

Interactions

Illustration of these influences can be described by contrasting the types of export market development activities against the continuum of commodity/product types (Figure 3). As noted above, one would expect the mix of activities to favor consumer promotion more for those markets when incomes are high and the emphasis is on high-value consumer packaged goods. Technical assistance support would be emphasized to a much greater degree for bulk commodities. Trade servicing types of activities would fall somewhere in between but probably increase in importance where more complex market channels existed and for more specialized high value products.

Improvements and Conclusions

Several broad observations can be drawn from existing studies and this basic framework. First, there is evidence that well designed and executed export promotion efforts can yield significant results. It will be difficult for most U.S. commodity groups to avoid addressing export markets so careful attention to export market development is warranted.

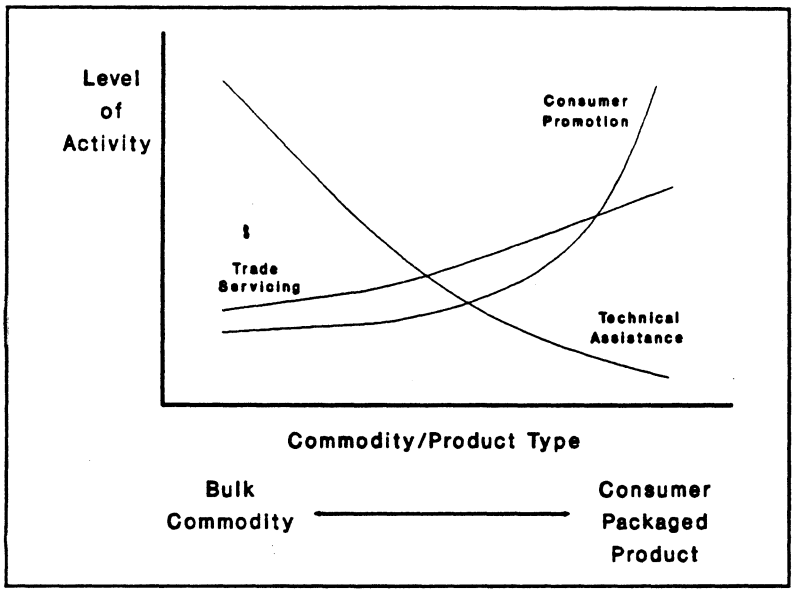

Figure 3. Conceptual Relationship between Commodity/Product Type and Mix of Export Promotion Activities.

The level of expenditure and type of activities utilized must be continuously reevaluated in relation to the market addressed. Size, competition, and degree of development all are key factors. Don't extrapolate too far from general studies done by others.

More and better designed market tests are needed. Good management in export promotion is no different than any other business activity. It is possible to design and implement very useful market tests in most export markets.

It has also been observed that a different mix of generic promotion efforts are required in more developed markets. Recognition of this is important in developing a well targeted strategic marketing plan.

There is a need for better integration of export promotion strategies with product management. One of the key limitations to generic promotion sponsored by commodity groups is the discontinuity between the promotion efforts and the product management and other marketing decisions made by individual firms exporting products within that commodity group. More emphasis on planning and coordination will benefit both the individual exporters and the industry.

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Institutional Changes Ahead: Perceptions, Attitudes, and Reality

Maury E. Bredahl[*]

Introduction

A host of well-known international factors will continue to affect agriculture: the debt burden of developing nations that limits their ability to import agricultural products; the weak dollar, needed to control the large trade deficit of the United States, which favors agricultural exports; and the high interest rates, relative to historical levels, needed to ensure an inflow of foreign funds to finance the U.S. budget deficit. Although each of these factors directly affects U.S. agriculture, all of them contribute also to the environment of international trade relations and the on-going negotiations in the General Agreement on Tariffs and Trade (GATT).

In this paper I review that environment, the perceptions and attitudes of trading nations, the state of international trade relations, and the forces that have contributed to the current animosity between the United States and its trading partners. Perceptions and attitudes bear on legislation and on various actions that may be taken against the trading practices of other nations. Agricultural trade is conducted within the reality of international trade relations. But included in that *reality* are the several *perceptions* held about agricultural trade and the *attitudes* derived from them.

The starting point is to define each of these words and relate that definition to the atmosphere of international trade relations:

perception: an understanding, mental image; international agreement on the problem.

attitude: a mental position concerning a perception; solution to the problem.

reality: something that is not dependent, but exists necessarily.

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International Trade Relations

Perceptions

An important perception held by the U.S. Congress, and by the public for that matter, is that other nations are "unfair traders." Japan is most often singled out for special attention. Members of Congress "perceive" that the unfair trading practices of other nations contribute to our stubbornly large trade deficit. An associated perception is that international trading rules have been ineffective in our dealing with the unfair trading actions of other nations.

Other nations allege that the large and stubborn U.S. budget deficit causes the equally large trade deficit. They reason that the United States is consuming too much, and that the demand for goods, fueled by the budget deficit, can be met only by imports. They perceive that the United States is withdrawing from its international commitments as it addresses its stubborn budget and trade deficits. Our trading partners point to the attitudes of Congress, and the recently enacted Trade Act, as proof of their perception.

In addition to the provisions of the Trade Act, they point to the oil-tax funding of the "Superfund," a fund that is to be used to restore environmental quality in especially polluted areas. They regard the tax as discriminatory, because when Congress levied a tax on oil to provide the necessary funds it put a higher fee on imported oil than on domestic production. This provision denies "national treatment" to oil imports. The national treatment rule requires that any imports into a country receive the same treatment as domestic production. It is a fundamental international obligation under the GATT. Not only is the superfund clearly discriminatory, it is said, but the United States has blocked consideration of the issue in the multilateral forum set up for addressing such issues.

Canadians point to our action in putting countervailing duties on their hog and pork exports to the United States, action taken in spite of the recently signed U.S./Canadian Free Trade Agreement. They call it evidence of U.S. withdrawal from its international obligations.

Attitudes

The perceptions that other nations don't play fair and that international rules don't work has fostered the attitude that legislation is required to allow the United States to take unilateral actions against alleged offenders. The "Super 301" provision of the Trade Act facilitates actions by U.S. producers against imports, and it forces the government to respond in a very short time. Other provisions of the law require the government to specify which nations, and which of their trading practices, are regarded as allowing them an unfair competitive position in U.S. markets. The countries on this "hit list" must respond to the allegations within a short period. If the dispute cannot be resolved in bilateral negotiations, the U.S. government must take punitive action.

Of considerable importance is the attitude that international trade sanctions can be used to counter what are essentially domestic policies in other nations. The United States has challenged the beef import restrictions of South Korea on the grounds that they are unfairly restrictive on importation of beef. The import restrictions are an integral part of the price stabilization and income support policies of South Korea. The two policy objectives are essentially domestic decisions. Many nations would argue that such internal matters should not be subject to international review and scrutiny.

The United States has also adopted the attitude that if international rules don't work, the establishment of bilateral free-trade areas is the next best way to pursue free trade. This attitude led to the U.S./Canadian Free Trade Agreement and to negotiations with other nations for similar arrangements.

Other nations interpret the situation differently. Each does so, of course, in its own self-interest. The attitude in each case is that the withdrawal of the United States from its international commitments justifies similar actions on that nation's part to remedy trade disputes.

Reality

Other nations will increasingly adopt the attitude that if it's okay for the United States (to ignore international rules and procedures), its okay for them too. This attitude could result in two policy initiatives in other nations: enactment of national laws that allow them to take similar actions in similar circumstances, and, eventually, international acceptance of their right to do so in the rules of international trade agreements.

The reality coming into view is a tougher, meaner, and more uncertain trading environment. It is international acceptance of the right of other nations to question what are essentially domestic policy decisions. The negotiations on agricultural trade will be shaped by this reality.

International Agricultural Trade Negotiations

Perceptions

Three perceptions held by the United States and its trading partners determine the attitudes that drive international agricultural trade relations and the agricultural trade negotiations. These are perceptions that --

* domestic farm programs distort trade;
* farm programs are too costly;
* GATT rules for agricultural trade are inadequate.

Farm Programs Distort Trade

Nations concur in the belief that domestic agricultural policies distort trade. Many policies raise producer prices above border prices and so stimulate production. These policies often increase consumer prices as well and so dampen demand. Both effects tend to reduce trade. These are the theses. Concurring that domestic farm policies distort trade means that those policies must be subject to trade negotiations.

The perception that farm policies distort trade grew out of a measurement of their impacts on producer revenues and consumer expenditures. Such a calculation was necessary to move the international debate from an emotional to an intellectual level, and to focus discussion on the policies themselves and not on their political justification.

The Organization for Economic Cooperation and Development (OECD) estimated the subsidy that would be necessary to compensate farmers for the removal of all protective measures in their behalf. This statistic, termed the producer subsidy equivalent, is shown in Figure 1 for key products in the United States, the European Community (EC), and Japan. The figure relates the subsidy to farmer revenues by expressing it as a percent of those revenues.

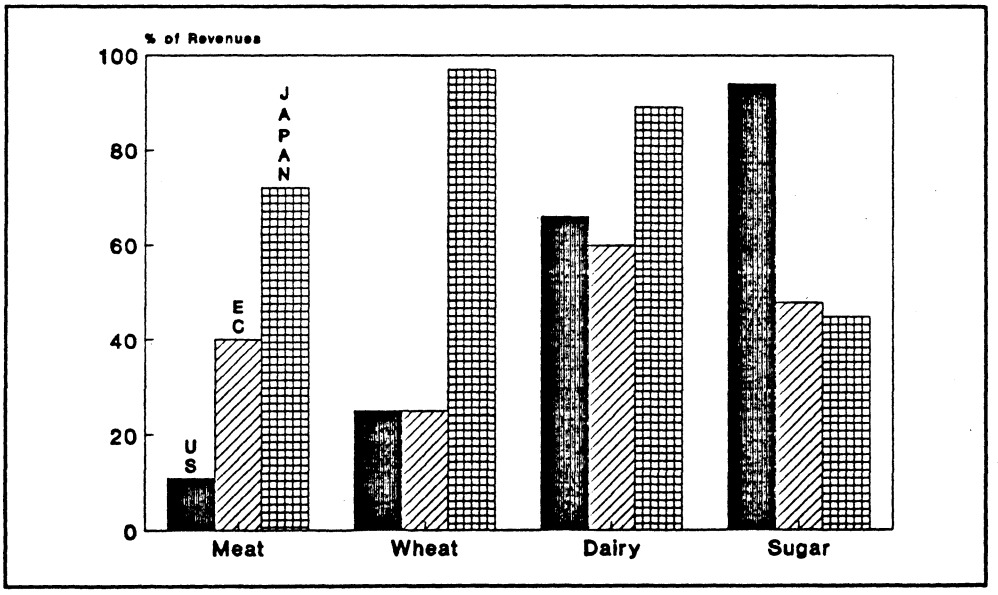

Figure 1. The Subsidy, as a Percent of Total Revenues Needed to Compensate Producers for the Loss of Government Programs.

The first panel illustrates the subsidy for red meats. Because the United States has few programs for these products, the subsidy equivalent is only about 10 percent. In the EC, about 40 percent of the revenues of livestock producers is attributed to policy actions. In Japan, the subsidy is even greater: about 70 percent of the revenue of livestock

producers is so attributed. For the EC and Japan, a significant part of the subsidy simply offsets the high prices for feedstuffs that arise from farm policies that protect their cereal producers. U.S., Australian, and other livestock exporters allege that these subsidies stimulate livestock production in the EC and Japan and hence reduce their (e.g. U.S.) exports.

The subsidy that would be needed to compensate dairy farmers in the event of removal of dairy-producer protection is large everywhere. It ranges from about 60 percent of farmer revenues in the EC and the United States to almost 90 percent in Japan. Exporters of dairy products allege that the production arising from such large subsidies significantly reduces trade -- and their chance to export.

The third panel illustrates the subsidy required to compensate wheat producers for the removal of government aids. Farmers in the United States and the EC receive about 30 percent of their revenues from the effect of government policies. The subsidy to Japanese wheat producers is very large: almost all of their revenues can be attributed to government policies. To promote the switch from rice to wheat production, which is encouraged, the wheat subsidy must exceed that paid for rice production, which itself is very large.

The subsidy equivalent for U.S. sugar producers (about 90 percent) is much greater than that paid producers of other crops in the United States, and exceeds that accruing to sugar producers in other nations. The United States relies on stringent import quotas to drive the domestic price of sugar -- typically to almost four times its border price. Removal of the import restrictions would cause the domestic price to plummet, and would require a modification in the domestic sugar program if producer incomes were to be sustained. This illustrates the basis for the perception that domestic farm programs distort trade, and must therefore be subject to international negotiation.

Cost of Farm Programs

The perception that farm policies distort trade does not greatly affect the attitudes of nations. After all, farm programs have changed little for many years and they have not been subject to international review. The perception that farm programs are too costly does affect the attitude of individual nations as their governments look to an international agreement to bolster their negotiating position with their own domestic farm groups.

Two components of the cost of farm programs are direct government expenditures and the consumer cost of high food prices. These two costs amount to about $250 billion annually for all developed countries combined. Besides these costs to those countries, farm programs in developed nations that subsidize production and exports cost developing nations $10 billion annually as they lose markets, and transfer about the same amount to the Centrally Planned countries in reduced import costs to them.

In the United States, the cost of farm programs is reckoned to be about $40 billion, and in the EC it is about $45 billion (see Figure 2). The cost in Japan is about half that

amount. A significant portion of the cost to the United States (about $15 billion) and to the EC (about $10 billion) serves to offset the impacts of policies in other countries. Subsidized production and exports drive down border prices, which drives up subsidy costs in other countries. The perception that a large portion of costs borne by an individual country simply offsets other countries' policies has bolstered the willingness to negotiate agricultural policies multilaterally.

On the other hand very little of the internal costs of domestic farm policies to Japan can be traced to the policies of other countries. The relative isolation of Japan as a food importer helps explain her contention that problems in international agricultural trade are caused by production and export subsidies of other nations. The countries providing those subsidies should assume responsibility for remedying the situation, as it is not a Japanese problem: thus the Japanese declare.

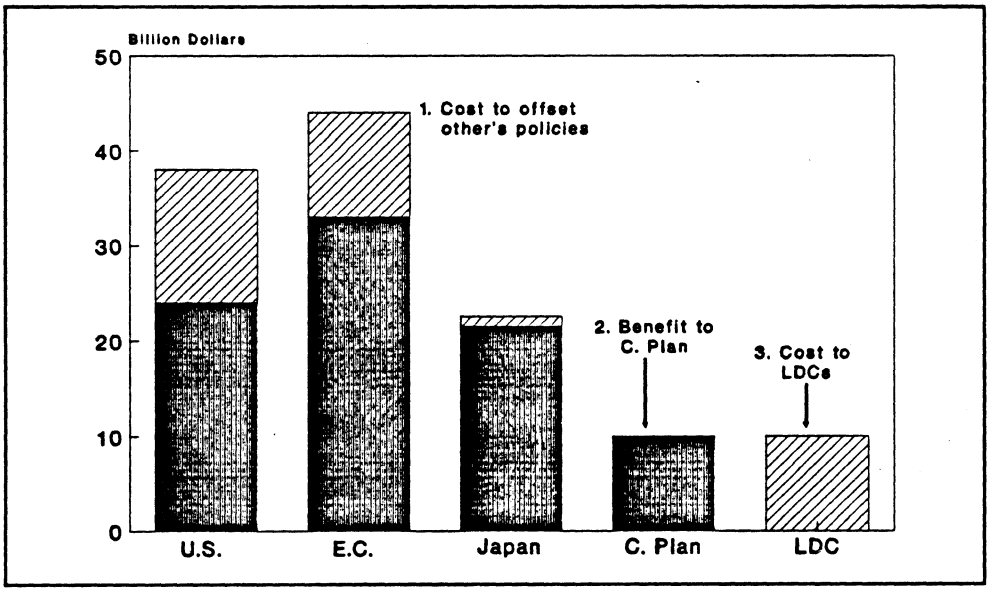

Figure 2. The Cost of Agricultural Policies.

The perception that developing nations suffer from the subsidized production and exports of developed nations contributes to the attitude that farm policies should be reviewed internationally. Importers among the developing nations gain from lower prices, but the loss to their own exporters more than offsets that gain. In total the cost to developing nations is about $10 billion annually. By coincidence, this happens to equal the benefit to centrally planned countries from importing commodities reduced in price by export subsidies of developed market economies (Figure 2)

GATT Rules are Inadequate

Many nations have insisted that international trading rules for agricultural products must be different from those for industrial products. The United States has insisted that Section 22 of the Agricultural Adjustment Act, which allows import restrictions if production is likewise restricted, takes precedent over GATT obligations. The EC has long argued that its Common Agricultural Policy, which entails variable import tariffs and export subsidies, is a domestic program and not subject to international obligations. Canada, using the same logic as the United States, has felt free to put import restrictions on products that are subject to Canadian supply control. Because nations have not wanted international disciplines on agricultural programs, the GATT has not governed trade in agricultural products effectively. But as trade disputes have escalated in recent years and budget costs have risen, there has been a growing recognition and acceptance of a need to recast the GATT rules for agricultural trade.

The conceptual framework underlying GATT is based on:

consensus rules:	unanimous agreement is required for the adoption of rules and disciplines.
enforcement by agreement:	a nation must agree that its policies and trade actions can be challenged by other nations, and, moreover, must agree to accept a penalty for offenses.
reciprocity:	any concession offered to a nation must be extended equally to all other nations.
national treatment:	imports must receive the same treatment as domestic production.

Clearly, a great many agricultural policies of developed nations violate these basic GATT principles.

The GATT is to international trade what the National Collegiate Athletic Association (NCAA) is to college athletics. But the job of the NCAA is easier. If it were to operate with the same framework as the GATT:

* rule changes would require unanimous approval of all universities, rather than a simple majority;
* a university could refuse to allow investigation of its recruiting program, and if it did allow an investigation, it could elect not to accept the prescribed penalty.

The NCAA would be an impotent force in college athletics if it operated within those rules. It is effective only because colleges and universities see it in their best interest to have an effective policing agency. GATT is struggling to carry out an NCAA-style function without possessing NCAA-type powers.

Attitudes

Attitudes toward required changes in GATT rules for agricultural trade vary across nations. But all nations agree that some changes are needed. There is international agreement that nations have a right to support farm incomes, but that support should be given in a way that minimizes trade distortions. Beyond that, there is little common international understanding on the scope of the changes or even on the negotiating framework within which to define the scope.

The United States has agreed that the EC can support its farmers, but in many ways that would require fundamental changes in the Common Agricultural Policy. The United States has proposed the conversion of non-tariff barriers to bound tariffs, and gradual reduction in those tariffs. It has also proposed elimination of the GATT rules that allow the imposition of import controls for those products subject to supply control. The United States has advanced the idea of reinstrumentation of policies, i.e., the adoption of policies that provide the same level of support as now but would do so with less trade distortion.

The EC has targeted the support programs of the United States and the budget difficulties to which they contribute. It has proposed the use of a "support measurement unit" or SMU to measure the level of support to a nation's agriculture. Negotiations would then concentrate on the gradual reduction of that support. The SMU is, of course, constructed to favor the policies of the EC and target the policies of the United States.

Canada has walked a tightrope in the GATT negotiations. The strength of its dairy and poultry lobbies force that country to seek international sanction of import restrictions for supply-controlled industries, even as open markets are sought for cereals. Canada and other members of the Cairns Group are attempting to find a middle ground between the United States and the EC in trade policy negotiations.

Reality

Failure to reach agreement in agricultural negotiations stands to have as much importance as an agreement. Without an agreement, trade disputes will escalate as nations, following the lead of the United States, unilaterally impose sanctions against the trade actions of other nations. In this setting, international review of essentially domestic agricultural policies will increase.

A GATT agreement in agriculture would establish a similar atmosphere, except that rules would govern the settling of disputes. Nations would call into question any policy changes or program modifications that are perceived to better a particular (competitive) nation's trade position. The EC has already challenged the changes in the U.S. set-aside requirements. The United States has challenged the basic food safety law of the EC.

The solution is to define internationally acceptable agricultural policies, and to adopt international procedures for switching to those acceptable policies. Of course, the United States could demand that our current policies be accepted; that has been our position in

the past. But as in the past, whatever excuse is used by the United States to justify its policies will be used by other nations too with regard to their own policies.

Sometimes U.S. agricultural programs are justified, or defended, on the basis of their small proportion of the U.S. budget. That criterion for acceptability of agricultural programs -- their budget cost -- would be attractive to many nations. Nations that are importers routinely pass the cost of policies to their consumers without any government expenditure. They would welcome international acceptance of a criterion of that type.

The reality is that, with or without a GATT agreement, international scrutiny of domestic agricultural policies will increase. But without a GATT agreement, trade will be less predictable and subject to unpoliced disruptions or impairment. The several considerations surely militate in favor of working out a practicable agreement.

The Economic Impact of A U.S.-Japan Free Trade Agreement

James Gleckler and Luther Tweeten[*]

Introduction

This paper outlines economic and noneconomic implications for food and agriculture of a free trade agreement (FTA) between the U.S. and Japan. Political sentiments, mainly drawing on noneconomic issues and currently not supporting an agreement, need to weigh economic and noneconomic advantages of an agreement. Economic factors could ultimately offset noneconomic factors, causing a shift in political sentiments.

Free trade agreements have been most frequent among nations with similar cultural interests and common borders as evidenced by the EC and U.S.-Canada FTAs. While such agreements offer advantages of amiability and understanding among nations, they do not necessarily offer advantages of gains from trade which are proportional to *dissimilarity* in factor endowments and other dimensions of comparative advantage.

Japan and the U.S. are a case in point. Japan has a comparative advantage in manufacturing (consumer electronics, automobiles, etc.) and, increasingly, in international finance. The U.S. has a comparative advantage in agricultural production, airplane manufacturing, and pop entertainment (television, music, movies, etc.). The large differences in comparative advantage imply large potential gains from trade. Other advantages from a U.S.-Japanese FTA include:

1. Assurances that each country is a reliable supplier, easing fears by Japan of inadequate food supplies and by the U.S. of insufficient computer chips in case of international upheaval or policy disagreements.

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2. Countervailing power. The European Community will have formidable trade bargaining power as intra-border measures are eliminated by the end of 1992. To reduce trade barriers, the EC may need to be confronted with countervailing power from the likes of a U.S.-Japan FTA.
3. An alternative to issue-by-issue negotiations. Currently, trade differences with Japan are resolved issue-by-issue after extensive and often acrimonious and divisive negotiations. The FTA offers a "wholesale" approach to bilateral trade negotiations.
4. An alternative to GATT negotiations. The Uruguay Round, at best, will fall far short of eliminating trade barriers among nations. Nations including the U.S. and Japan subsequently will seek alternative bilateral arrangements to further reduce trade barriers.
5. A catalyst for a wider FTA (see Hamilton *et al.*). A U.S.-Japan FTA could be the catalyst for a more general relaxation of North American-East Asian trade barriers. The natural trade alignment of Japan with Taiwan and South Korea is impaired by colonial legacy. The U.S. could be an "honest broker" in discussions that might bring Taiwan and Korea into an FTA that also includes the U.S. and Canada. Recent initiatives by Australia call for a Pacific Rim trade association to include not only the above countries but also ASEAN countries, Australia, and New Zealand (Josling). Such an option could be even more attractive if GATT negotiations fail.

This paper focuses only on a U.S.-Japanese FTA, and then only on the agricultural impact. Trade data help to reveal areas of comparative advantage. In 1988, Japan ran a $52 billion merchandise trade surplus with the U.S. (Table 1). The trade balance surplus had two general components with very different behavior: (1) agricultural trade which in net provided a $7.4 billion surplus for the U.S. and (2) a nonagricultural product trade surplus for Japan of $59 billion. Data in Table 1 clearly point to a comparative advantage for the U.S. in agricultural products such as "food and live animals" and a comparative advantage for Japan in "machinery and transport equipment."

Table 2 further illustrates U.S.-Japanese trade relationships based on 1985 data. As expected Japan relies relatively heavily (42 percent in 1985) on U.S. markets for *export* of "machinery and transport equipment." Ironically, it also relies very heavily (61 percent) on the U.S. for *import* of machinery and equipment. Japan on average received 20 percent of its imports from the U.S. but derived 33 percent of its food imports from the U.S.

Table 1. Merchandise Trade between the U.S. and Japan, 1988, U.S. Basis.

Item	U.S. Exports to Japan[a]	U.S. Imports from Japan[b]	Surplus or Deficit
		($ Million)	
Grand total	37,732.1	89,802.1	- 52,070.0
Agricultural commodities	7,631.8	231.5	7,400.3
Nonagricultural commodities	30,100.3	89,570.6	- 59,470.3
Food and live animals	6,759.5	329.7	6,429.8
Beverages and tobacco	----	43.7	- 43.7
Oils and fats, animal and vegetable	65.2	14.2	51.0
Crude materials (metals, etc.)	----	155.7	- 155.7
Mineral fuels, lubricants, and related materials	1,422.4	107.4	1,315.0
Chemicals and related products	4,001.7	2,187.2	1,814.5
Manufactured goods and articles	5,996.4	15,724.1	- 9,727.7
Machinery and transport equipment	9,830.2	70,231.6	- 60,401.4
Other	9,656.7	1,008.5	8,648.2

Source: U.S. Bureau of the Census.

[a] FAS value.
[b] Customs value.

Table 2. Merchandise Trade of Japan with the U.S. and the World, 1985.

Item	Japanese Exports			Japanese Imports		
	to U.S.	to World	U.S. Share	from U.S.	from World	U.S. Share
	$ Million	$ Million	Percent	$ Million	$ Million	Percent
Total	65,277.6	175,637.8	37.2	25,793.0	129,538.7	19.9
Foods	400.6	1,315.7	30.4	5,084.9	15,547.3	32.7
Textiles	1,073.6	6,263.2	17.1	442.4	2,155.1	20.5
Other raw materials	----	----	---	3,373.2	9,656.7	34.9
Chemical products	1,407.5	7,697.7	18.3	3,396.5	8,072.7	42.1
Fossil fuels	----	----	---	1,956.1	55,790.2	3.5
Nonmetallic mineral products	766.3	2,147.5	35.7	----	----	---
Metal and metal products	4,619.1	18,491.1	25.0	693.6	6,232.1	11.1
Machinery and transportation equipment	52,461.9	126,178.9	41.6	7,544.8	12,371.7	61.0
Others	4,548.6	13,543.7	33.6	3,301.5	19,712.9	16.7

Source: Foreign Press Center, p. 49.

Estimates of Impact from Trade Liberalization

A model developed at The Ohio State University is used to estimate the impact of agricultural market liberalization in Japan and the United States. The model was created in the USDA SWOPSIM framework (see Roningen). It is a static, nonspatial, price equilibrium model incorporating the assumptions of neoclassical trade theory. The model was initialized using USDA-developed, medium-term (5-year) elasticities in the behavioral equations. Supply, demand, trade, and price data are from the ERS ST86 (1986) database. Six agricultural commodities are modeled: beef, wheat, corn, other coarse grains, rice, and soybeans. The model allows for interactions between commodities such as input-output relations and substitution in consumption and production.

The trade regions modeled are the U.S., Japan, the European Community (EC), Canada, Australia, and developing exporters (Brazil, Argentina, Thailand, etc.). World price transmission elasticities (percentage change in domestic price resulting from 1 percent change in domestic price) are less than one for regions which tend to isolate their domestic markets. In particular, the EC price transmission elasticity is zero for all commodities except soybeans.

Framework for Japanese FTA with the Rest of the World

To gain perspective for interpreting later results for a U.S.-Japan FTA, the first simulation is essentially a Japan FTA with the world but allowing Japan to maintain domestic food production. Japanese consumers buy at international prices from a world with trade barriers and opportunities as they existed in 1986. A graphical conceptual presentation of the first simulation, where domestic production is maintained to serve historic self-sufficiency objectives but Japanese consumers are allowed access to rest-of-world markets (exporters), is presented in Figure 1.

Initially, Japanese food and agriculture markets are regulated with quotas on imports which hold the price at the 1986 level P_t in the left panel. This border measure is represented by the totally inelastic supply S' and demand D', and the vertical excess demand (ED) in the center graph. Domestic production is Q_S, consumption is Q_D, and imports are $Q_D - Q_S = Q_m$.

If producer price is maintained at P_t but the Japanese consumer market is liberalized so consumers can buy at the world price, the excess demand in the center graph shifts to ED' and a new world price P'_w results which is higher than the former world price P_w. Purchasing at the world price P'_w, Japanese consumers enjoy an increase in consumer surplus of area a+b+c+d in the left panel. Without consumer purchases at P_t, the Japanese government must purchase and resell domestically produced commodities at a cost of area a+b. It forgoes import duty collections of area c. This leaves a net welfare benefit to Japan of area d.

The higher world price benefits exporting nations, as reflected in the right panel of Figure 1. Producers gain area e+f while consumers lose area e, leaving a net welfare gain to exporters (rest-of-world) of area f.

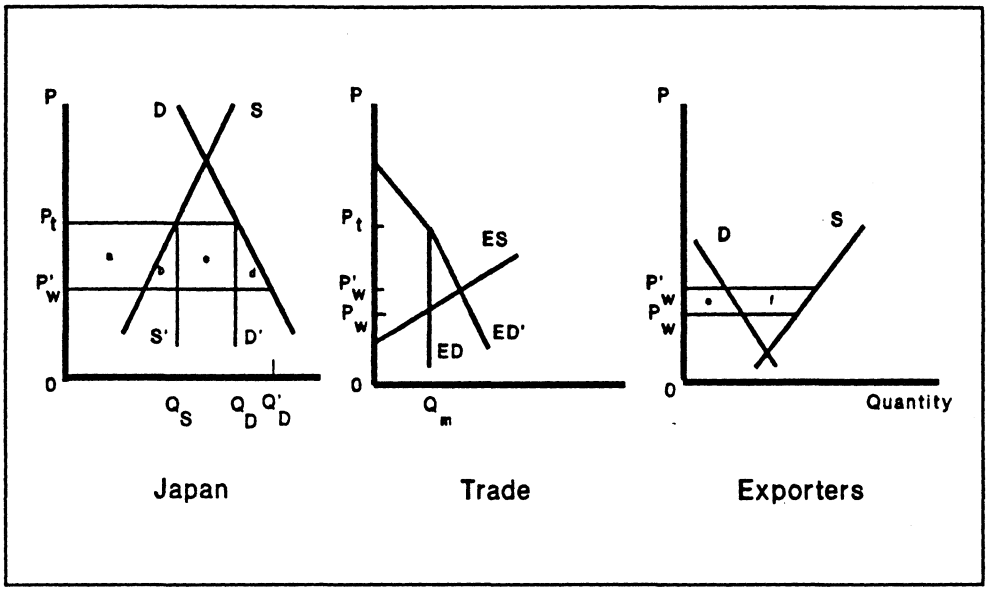

Figure 1. World Impacts of Japanese Consumer Liberalization.

(1) *Empirical estimates for major traders of Japanese consumer market liberalization.* Empirical estimates of Japanese consumer market liberalization are presented in Table 3. The pre-liberalization producer price and quantity in Japan are maintained. The liberalization enables consumers to buy at world prices. Estimates apply to 1986 conditions providing protection for Japanese producers. Estimates of the areas described in Figure 1 are listed in the columns labeled producer surplus, consumer surplus, budget savings, and net welfare. While having little impact on domestic markets within the EC, because of higher world prices the Japanese liberalization saves the European Community restitution funds on its subsidized exports. Some variable levy revenue is lost on rice.

Table 3. Impacts of Japanese Consumer Liberalization, with Japanese Consumers Buying at World Prices and Japanese Producers Receiving at least 1986 Prices, Six Agricultural Commodity Markets, 1986 Conditions.[a]

Country	Commodity	Producer Price	Production	Consumer Price	Consumption	Welfare Change			
						Producer Surplus	Consumer Surplus	Budget Savings	Net Welfare
		(% change)	(% change)	(% change)	(% change)	($ million)			
U.S.	Beef	1.35	0.86	0.81	-0.56	312	-332	0	-20
	Wheat	0.40	0.21	0.55	-0.08	37	-20	0	17
	Corn	-0.03	-0.02	-0.04	0.23	-7	5	0	-2
	Coarse Grain	0.59	0.35	0.77	-0.15	26	-22	0	4
	Rice	2.02	0.81	2.89	-0.71	30	-12	0	18
	Soybeans	0.09	0.05	0.09	0.06	9	-5	0	4
	Total Change					407	-386	0	21
Japan	Beef	0	1.18	-33.51	50.41	48	5556	-4132	1424
	Wheat	0	0	-47.78	10.54	0	1081	-837	244
	Corn	0	0	-5.39	-5.84	0	102	-76	26
	Coarse Grain	0	0	-35.94	15.79	0	332	-233	99
	Rice	0	0	-71.26	36.58	0	18829	-16556	2273
	Soybeans	0	0	-0.13	0.11	0	3	0	3
	Total Change					48	25903	-21834	4069
EC	Beef	0	0	0	0	0	0	38	38
	Wheat	0	0	0	0	0	0	14	14
	Corn	0	0	0	0	0	0	0	0
	Coarse Grain	0	0	0	0	0	0	60	60
	Rice	0	0	0	0	0	0	-23	-23
	Soybeans	0	0	0	0	0	-3	0	-3
	Total Change					0	-3	89	86
Canada	Beef	2.27	1.07	1.37	-1.08	51	-52	0	-1
	Wheat	0.59	0.20	0.59	-0.06	25	-9	0	16
	Corn	-0.04	-0.01	-0.04	0.36	0	0	0	0
	Coarse Grain	0.62	0.47	1.02	0.04	10	-7	0	3
	Rice	6.24	0.61	3.12	-0.76	0	-2	0	-2
	Soybeans	0.07	0.03	0.09	0.07	0	0	0	0
	Total Change					86	-70	0	16

		Producer Price	Production	Consumer Price	Consumption	Welfare Change: Producer Surplus	Consumer Surplus	Budget Savings	Net Welfare
		(% change)	(% change)	(% change)	(% change)		($ million)		
		2.41	1.68	1.39	-1.07	44	-20	0	24
		0.84	0.50	0.69	-0.10	9	0	0	9
		-0.05	-0.44	-0.05	0.37	0	0	0	0
		1.29	1.05	1.23	-0.24	5	-3	0	2
		9.98	5.87	8.66	-3.67	4	0	0	4
		0.09	0.05	0.09	0.09	0	0	0	0
						62	-23	0	39
Developing Exporters	Beef	1.66	0.83	0.87	-0.56	157	-150	0	7
	Wheat	0.41	0.19	0.43	0	10	-11	0	-1
	Corn	-0.02	-0.15	-0.03	0.18	-7	1	0	-6
	Coarse Grain	0.71	0.51	0.64	-0.15	3	-2	0	1
	Rice	3.08	0.97	1.68	-0.56	409	-375	0	34
	Soybeans	0.05	0.03	0.06	0.06	3	-3	0	0
	Total Change					575	-540	0	35

[a] Japanese consumer prices are allowed to fall to world levels; purchases are made anywhere in the world where supplies are available at competitive prices. World impacts are as follows for:

	World Price Change (%)
Beef	2.53
Wheat	0.98
Corn	-0.05
Coarse Grain	1.14
Rice	6.24
Soybeans	0.09.

(2) *Empirical estimates for major world traders of Japanese producer and consumer market liberalization.* Assumptions in Table 4 are similar to those in Table 3 except that Japanese producers as well as consumers receive world prices. As expected, Japanese producer losses are substantial with full decoupling in Table 4 when compared with retained production incentives in Table 3. Welfare gains to Japan are $1.4 billion more with full farm trade liberalization than with trade liberalization only for consumers -- area b added to d in Figure 1. Production falls sharply in Japan with producers receiving world prices.

World beef and wheat prices are raised approximately 1 percentage point and rice by 10 percentage points. With Japanese trade and commodity program liberalization, world price (see Tables 3 and 4 footnote) is higher in every case except corn, for which Japanese consumption fell slightly. This is due to minimal previous Japanese intervention in corn markets while distortions of wheat, coarse grain (other than corn), and rice markets were substantial. Substitution of cheaper feeds for corn brings a small decrease in corn consumption even in the face of an own-price drop. Cheaper feed inputs enable Japanese beef producers to post modest production and income gains. The gains would be greater if results in Tables 3 and 4 had been based on post-1986 conditions.

U.S. producer benefits exceed consumer losses in the case of more open world trade with Japan. The U.S. was a net importer of beef in the 1986 period used to calibrate estimates for this study. The opening of the Japanese beef market currently underway could eventually make the U.S. a net exporter of beef and hence a gainer from higher world beef prices in Table 3. The implication is that the negative welfare gains (deadweight losses) for beef in 1986 shown in Table 3 may be reversed in future years, making the net income gain to the U.S. economy positive. U.S. beef trade reversals are examined in the next section.

By design, the semi-decoupling scheme maintains income and output of Japanese producers. Japanese consumer gains are huge and exceed the budget costs of supporting producers by a substantial amount. Total welfare (full national income) gain to Japan is estimated to exceed $4 billion. The net welfare gain to Japan is large relative to that to any other region or country. It would appear that the Japanese would take initiatives to remove trade barriers because they have the most to gain. However, such observations do not account for the political realities of an influential Japanese agricultural industry wary of shifting its income base from consumers to taxpayers. Welfare gains to Japan would be even larger if producers also received the world price as in Table 4 but loss of self-sufficiency and producers' political support might be considered a high price for economic gains.

Table 4. Impacts of Full Trade Liberalization with Japanese Producers and Consumers Receiving World Prices, Six Agricultural Commodity Markets, 1986 Conditions.[a]

Country	Commodity	Producer Price	Production	Consumer Price	Consumption	Welfare Change			
						Producer Surplus	Consumer Surplus	Budget Savings	Net Welfare
		(% change)	(% change)	(% change)	(% change)	($ million)			
U.S.	Beef	1.97	1.26	1.18	-0.82	456	-483	0	-27
	Wheat	0.78	0.44	1.08	-0.23	73	-40	0	33
	Corn	-0.03	-0.02	-0.04	0.32	-7	4	0	-3
	Coarse Grain	0.70	0.41	0.92	-0.13	31	-26	0	5
	Rice	5.48	2.16	7.82	-1.87	83	-31	0	52
	Soybeans	0.15	0.09	0.16	0.07	15	-9	0	6
	Total Change					615	-585	0	66
Japan	Beef	-64.62	-33.23	-33.27	49.86	-3092	5507	-200	2215
	Wheat	-90.39	-55.53	-47.43	10.92	-796	1078	-86	196
	Corn	-5.98	-1.83	-5.38	-9.65	0	97	-60	37
	Coarse Grain	-93.81	-72.95	-35.83	10.49	-281	316	-21	14
	Rice	-84.32	-60.40	-69.78	34.87	-15071	18361	-22	3268
	Soybeans	-78.80	-63.52	0.15	-2.44	-269	-4	0	-273
	Total Change					-19509	25355	-389	5457
EC	Beef	0	0	0	0	0	0	58	58
	Wheat	0	0	0	0	0	0	31	31
	Corn	0	0	0	0	0	0	0	0
	Coarse Grain	0	0	0	0	0	0	7	7
	Rice	0	0	0	0	0	0	-7	-7
	Soybeans	0.08	0.03	0.16	-0.06	0	-5	-10	-15
	Total Change					0	-5	79	163
Canada	Beef	3.32	1.57	2.00	-1.57	76	-76	0	0
	Wheat	1.17	0.47	1.16	-0.16	51	-18	0	33
	Corn	-0.04	-0.01	-0.04	0.49	0	0	0	0
	Coarse Grain	0.74	0.55	1.22	0.12	12	-8	0	4
	Rice	16.89	1.57	8.45	-2.01	0	-4	0	-4
	Soybeans	0.13	0.05	0.16	0.09	0	0	0	0
	Total Change					139	-106	0	33

Table 4 continued.

Country	Commodity	Producer Price	Production	Consumer Price	Consumption	Welfare Change: Producer Surplus	Welfare Change: Consumer Surplus	Welfare Change: Budget Savings	Welfare Change: Net Welfare
		(% change)	(% change)	(% change)	(% change)		($ million)		
Australia	Beef	3.52	2.45	2.03	-1.56	64	-29	0	35
	Wheat	1.65	1.18	1.35	-0.24	20	-1	0	19
	Corn	-0.05	-0.52	-0.05	0.48	0	0	0	0
	Coarse Grain	1.51	1.25	1.47	-0.23	7	-3	0	4
	Rice	27.03	15.43	23.45	-9.05	12	-1	0	11
	Soybeans	0.17	0.08	0.17	0.12	0	0	0	0
	Total Change					103	-34	0	69
Developing Exporters	Beef	2.43	1.21	1.27	-0.81	229	-219	0	10
	Wheat	0.80	0.39	0.84	0.13	19	-22	0	-3
	Corn	-0.02	-0.35	-0.03	0.30	-15	1	0	-14
	Coarse Grain	0.84	0.56	0.76	-0.14	3	-3	0	0
	Rice	8.18	2.55	4.45	-1.47	1094	-991	0	103
	Soybeans	0.09	0.05	0.10	0.08	6	-5	0	1
	Total Change					1336	1239	0	96

[a] Japanese consumer prices are allowed to fall to world levels; purchases are made anywhere in the world where supplies are available at competitive prices. World impacts are as follows for:

	World Price Change (%)
Beef	3.69
Wheat	1.93
Corn	-0.05
Coarse Grain	1.35
Rice	16.89
Soybeans	0.17.

Framework of a U.S.-Japan Free Trade Agreement (FTA)

Figure 2 presents the case of a U.S.-Japanese liberalized trade agreement. As in the previous simulation, Japanese producers initially are maintained at 1986 production and income levels. Additionally, Japanese base imports from third-countries, including Australia, Canada, and other exporters except the U.S. are not changed from their initial quantity $Q_D - Q_S = Q_e = ED$. (The difference between D and D' at P_t in the left panel is U.S. exports x to Japan at the initial price in Japan.) Additional imports from consumer market liberalization are solely from U.S. markets, making excess demand for U.S. exports to Japan D - D' = ED' under the FTA. The U.S. maintains 1986 commodity programs in all scenarios. World price continues at P_w but U.S.-Japan equilibrium FTA price is P_N. Japanese imports from the rest of the world, Q_e in Figure 2, fall short of Q_m in Figure 1 by U.S. exports x to Japan before the FTA.

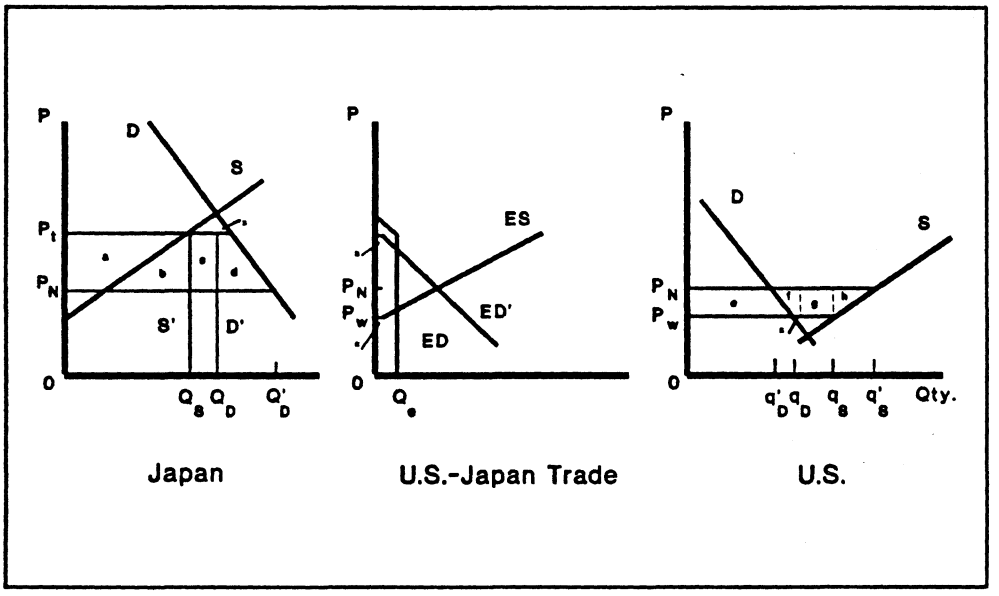

Figure 2. A U.S.-Japanese Liberalized Trade Agreement.

U.S. domestic supply S and demand D give rise to excess supply quantity $q_s - q_D$ exported at world price P_w. Of this quantity, x went to Japan before the FTA. Thus the post-FTA excess supply curve for U.S. agricultural exports to Japan is $S - D - (q_s - q_D - x) = ES$. The U.S. excess supply intersects Japan's excess demand at the new U.S.-Japanese trade price (P_N), allowing Japanese consumers to benefit by area a+b+c+d. Net welfare gain to Japan is d with Japanese producers' incentives retained and is b+d when producers' incentives are allowed to fall to U.S. levels. Price P_N will be higher when producer prices are allowed to fall in Japan. Lower Japanese production raises P_N.

To prevent losing producer gains from leveling of world prices through arbitrage under the FTA in Figure 2, the U.S. government must be able to separate markets to Japan

so that P_N and the world price, P_w, do not converge. U.S. taxpayers are assumed to provide an export subsidy equal to $P_N - P_w$ to maintain world price at P_w. The cost to U.S. taxpayers is area g or $(q_S - q_D - x)$ times $(P_N - P_w)$. The righthand graph shows a gain to U.S. producers of e+f+g+h compared to continuation of Japanese trade restrictions. This gain to producers is partly offset by the loss to U.S. consumers of area e and loss to taxpayers of g under the FTA, leaving a net gain to the nation of f+h.

Comparing Japanese liberalization in a world market as shown in Figure 1 to a U.S.-Japanese trade pact in Figure 2, P_N falls less from P_t in Figure 2 than does P_w in Figure 1. Hence Japan gains less and the U.S. gains more with an FTA than when Japan opens its markets to the world. Japanese agricultural imports with liberalization are less in Figure 2 than in Figure 1. Figures 1 and 2 indicate only partial equilibrium (in farm products) and do not show gains from an FTA in nonfarm markets.

All commodities included in the study are net U.S. exports and conform to the conceptual framework in Figure 2 with the exception of beef, which is a net import and is illustrated in Figure 3. The increase in U.S. price and production results in price P_N. Production increases from Q_s to Q'_s with $Q'_s - Q_s$ exported to Japan. To maintain domestic sales of Q_s at price P_w the government must subsidize the original production at a cost of area a, leaving a net welfare gain of area b.

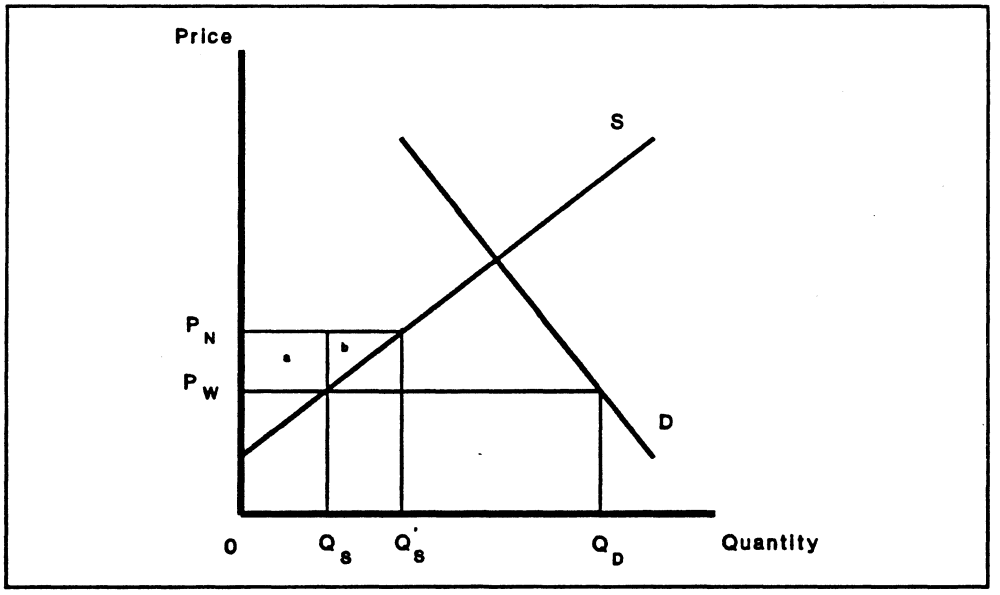

Figure 3. Maintaining Producer Gains - U.S. Beef.

(1) *Empirical Estimates for the U.S. and Japan of an FTA with Japanese Consumer Market Liberalization.* Empirical estimates of the U.S.-Japanese free trade agreement with only Japanese consumer market liberalization are presented in Table 5. Because advantages to U.S. producers of the Japanese consumer market liberalization are assumed

to be maintained by government, there is no impact on the "world market" of third-country economies. Japanese gains are less than those when consumers are allowed full access to world prices as shown in Table 3, but they are substantial nonetheless. U.S. gains, on the other hand, are about 16 times greater when a trade agreement directs Japanese consumer liberalization solely into U.S. markets. Especially significant are the gains to beef and rice producers. Total world welfare gain from this simulation is an estimated $2,745 million. U.S. gains of $350 million in Table 5 under the FTA are far larger than with world trade liberalization in Table 3 but Japanese net welfare gains in Table 5 are cut to about half those in Table 3.

(2) *Empirical estimates for the U.S. and Japan of an FTA with Japanese producer and consumer market liberalization.* Americans gain more when Japan's producer prices are allowed to fall to U.S.-Japan equilibrium FTA price levels in Table 6 compared to Table 5 where Japanese production was maintained. As expected, the sum of welfare gains in Table 6 with lower Japanese producer prices is greater than in Table 5 but both situations increase world welfare less than the opening of Japanese markets to world trade as depicted in Tables 3 and 4.

One interesting aspect of Table 6 is the increase in U.S. beef trade. Initially (1986 conditions), U.S. net trade is -739 (net imports) thousand metric tons. Net trade in beef at the new equilibriums corresponding to the simulations in Tables 3 through 6 is:

Table 3	-573 thousand metric tons
Table 4	-349
Table 5	-489
Table 6	+565.

When only Japanese consumer markets are part of the liberalized trade arrangement (Tables 3 and 5), or when the world is given full access to liberalized consumer and producer markets in Japan (Table 4), U.S. net trade in beef remains negative. When both producers and consumers in Japan respond to the U.S.-Japanese negotiated FTA price (Table 6), the U.S. becomes a net exporter of 565 thousand metric tons of beef.

Federal budget costs rise in the U.S. with the FTA as noted in Tables 5 and 6. The reason for the increase is the necessity for export subsidies for exports to countries other than Japan -- as noted in the earlier conceptual framework.

Table 5. Impacts of a U.S.-Japanese Free Trade Agreement with Japanese Consumers Buying at U.S.-Japanese Internal Market Equilibrium Prices and Japanese Producers Receiving 1986 Prices, Six Agricultural Commodity Markets, 1986 Conditions.[a]

Country	Commodity	Producer Price	Production	Consumer Price	Consumption	Welfare Change			
						Producer Surplus	Consumer Surplus	Budget Savings	Net Welfare
		(% change)	(% change)	(% change)	(% change)	($ million)			
U.S.	Beef	5.63	3.46	0	0	1302	0	-1282	20
	Wheat	3.27	1.64	4.51	-0.83	297	-165	-129	3
	Corn	-0.51	0.22	-0.77	0.79	105	17	0	122
	Coarse Grain	3.30	1.94	4.32	-1.16	147	-120	-22	5
	Rice	71.71	25.86	110.83	-17.01	1316	-401	-711	204
	Soybeans	0.27	0.16	0.28	0.26	27	-15	-10	2
	Total Change					3194	-684	-2154	356
Japan	Beef	0	1.04	-32.73	48.66	42	5398	-4035	1405
	Wheat	0	0	-45.19	18.88	0	1112	-786	326
	Corn	0	0	-4.53	-5.47	0	86	-65	21
	Coarse Grain	0	0	-33.13	20.12	0	322	-216	106
	Rice	0	0	-38.79	13.06	0	9545	-9011	534
	Soybeans	0	0	-0.05	0.08	0	1	0	1
	Total Change					42	16464	-14113	2393

[a] Economic outcomes including prices in countries other than the U.S. and Japan do not change perceptibly from 1986 conditions.

Table 6. Impacts of U.S.-Japanese Free Trade Agreement with Fully Liberalized Japanese Markets at U.S.-Japanese Market Equilibrium Prices, Six Agricultural Commodity Markets, 1986 Conditions.[a]

Country	Commodity	Producer Price	Production	Consumer Price	Consumption	Welfare Change			
						Producer Surplus	Consumer Surplus	Budget Savings	Net Welfare
		(% change)	(% change)	(% change)	(% change)	($ million)			
U.S.	Beef	8.10	5.00	0	0	1894	0	-1767	127
	Wheat	5.00	2.62	6.89	-1.47	464	-251	-187	26
	Corn	0.55	0.23	0.84	1.11	112	-94	-9	9
	Coarse Grain	3.78	2.21	4.95	-1.09	168	-137	-16	15
	Rice	136.30	41.06	194.40	-23.66	2482	-667	-1083	732
	Soybeans	0.44	0.27	0.47	0.34	44	-27	-12	5
	Total Change					5164	-1176	-3074	914
Japan	Beef	-62.79	-31.98	-32.16	47.41	-3024	5282	-862	1396
	Wheat	-89.40	-59.87	-43.64	22.53	-796	1114	-11	307
	Corn	-4.95	-1.51	-4.46	-9.04	0	81	-65	16
	Coarse Grain	-93.44	-76.66	-32.63	17.27	-281	310	-10	19
	Rice	-30.29	-16.51	-13.65	3.74	-2715	3229	-5	509
	Soybeans	-78.74	-63.44	0.43	-2.43	-269	-11	0	-280
	Total Change					-7085	10005	-953	1967

[a] Economic outcomes for other countries do not change perceptibly from 1986 conditions.

Conclusions

The U.S. has a strong comparative advantage in agricultural products and Japan in manufactured transportation and consumer electronics products. The nations, especially Japan, can realize very large economic benefits from a free trade agreement. Major conclusions of this study are as follows:

1. Economic gains are large to Japan from trade liberalization, even with semi-decoupling that preserves domestic farm output and producers' incomes but allows consumers access to international markets and prices.
2. Economic gains to Japan are larger under multilateral trade liberalization than under a U.S.-Japan FTA.
3. Welfare gains to Japanese consumers are especially large with trade liberalization. Losses of the government from import revenues are substantial but do not offset gains to consumers so net gains to Japan are positive. The gains from free trade may also be regarded as gains from commodity program liberalization.
4. Full multilateral liberalization, allowing prices worldwide to producers and consumers to fall to equilibrium world levels, would increase net welfare to Japan by an estimated $18.5 billion under 1986 conditions (Tweeten and Gleckler). Gains to Japan of over $5 billion when it alone liberalizes consumer and producer markets to receive world prices are sizable as noted in Table 4 but benefits to Japan would be much greater if all nations liberalized. Semi-decoupling allowing consumer prices to fall to world levels but maintaining farm output, prices, and incomes of producers in Japan at 1986 levels further reduces net benefits from full commodity program and trade liberalization.
5. Given continuation of self-sufficiency in Japan, results indicate that welfare gains to the U.S. from trade liberalization are fairly modest overall but are at least 16 times as large with an FTA (Table 5) than with multilateral trade liberalization (Table 3).
6. Worldwide trade and commodity program liberalization would increase U.S. net welfare (full national income) by $5.1 billion (Tweeten and Gleckler). Thus an FTA with Japan (Table 6) would produce approximately one-fifth of the potential gains from worldwide trade and commodity program liberalization.
7. Major welfare gains to the U.S. from multilateral "trade" liberalization noted in (6) above come mostly from U.S. commodity program liberalization. Without U.S. commodity program changes but with world trade barriers removed, net welfare of the U.S. would increase $2.8 billion -- still much greater than benefits of an FTA with Japan only. On economic grounds alone, results indicate that an FTA with Japan is preferred to the status quo but produces less welfare gains to the U.S. than multilateral world trade and commodity program liberalization.
8. U.S. producers are more favored in prices, production, and income under an FTA with Japan (Tables 5 and 6) than with either multilateral trade

liberalization alone or with multilateral world trade and commodity program liberalization combined.

9. U.S. farm producers gain more than U.S. food consumers from a U.S.-Japan FTA. However, U.S. consumer surplus losses in food would be offset by consumer gains in nonfood items imported from Japan.

10. Based on the estimates of this study, the Japanese might be expected to take initiative toward a free trade agreement. The strength of that commitment could be enhanced by failure of GATT negotiations. The foregoing analysis begs a question: If the gains from freer trade are as large as indicated, why are Japanese accommodations to such trade so grudging and modest? Semi-decoupling in theory would protect producers, agribusinesses, and self-sufficiency. However, interest groups in Japan (as in the United States) may feel uneasy depending on a politically vulnerable direct and obvious production subsidy. Lack of political influence and knowledge by consumers also plays a role.

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Korea's Agricultural Import Market and Effects of Market Liberalization

*Jong-Yong Kim**

I will share with you my views of Korea's agricultural market and the opportunities it holds for U.S. agricultural exporters in the areas of bulk commodities and high-value exports. I also will explain some of the Korean government's most recent import liberalization efforts and how they fit into the ambitious overall long-term market liberalization scheme for the nation.

Since 1988, Korea has become the second largest buyer of U.S. agricultural products. Considering Korea's size and income level, this represents a sizable share of U.S. agricultural exports. In 1988 alone Korea imported approximately $2.3 billion worth of U.S. agricultural products -- 99.6 percent of its imported soybeans were grown in the U.S., 82 percent of its corn, 58 percent of its total wheat imports, and 68 percent of its cotton imports. Korea also imports 77 percent of its raw hide from the United States. The total value of U.S. agricultural exports to Korea this year is expected to increase to approximately $2.5 billion in 1989, compared with about $2.25 billion in 1988. Korea is a growing agricultural market.

In addition to the flourishing agricultural commodity trade that is already taking place between Korea and the United States, tremendous progress has been made toward a full opening of the agricultural market. For example:

* Because of the Korean government's efforts toward removing trade barriers, the portion of liberalized agricultural products has increased from 55 percent in 1980 to 72.6 percent in 1988.
* The Korean government formed a Task Force in December 1988 to revise the schedules for agricultural liberalization through 1991. The new liberalization plan, which was announced on April 8 of 1989, will open the market to an additional 243 agricultural items. Among these items, at least 62 are of interest to U.S. exporters.
* Import duties for agricultural products have been reduced gradually from an average of 30 percent in 1984 to 25 percent this year. Again, U.S. interests have been specially considered.
* As to non-tariff barriers, the number of items under import surveillance has been reduced and import procedures have been relaxed.

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To further facilitate the market opening process, Korea has dispatched several buying missions to the U.S. Purchase contracts worth some $3.3 billion U.S. dollars were signed with American suppliers as a result of these missions. In March 1988, Korean agricultural leaders visited the U.S. and purchased over $137 million worth of American corn and soybeans. Beef buying missions came to American in April and August and purchased a total of $17 million worth of American boneless beef by open tender.

At the same time that our government is promoting more agricultural trade with the U.S., it is also attempting to meet the structural adjustment challenges that lie ahead. Last December a structural adjustment program was launched. The most important part of this program will promote non-agricultural income for farmers to reduce their dependency on inefficient agricultural production. To this end, the government is encouraging the development of small agro-industrial complexes in rural areas to create non-farm opportunities for displaced farmers.

This program and other economic and educational efforts are intended to create a more competitive agricultural sector. This is a long-term goal, however. Before these programs are fully implemented and producing the expected results, there will be time lags and adjustments.

Beef deserves particular mention as a special case because it is one of the exceptional areas where the Korean government has been forced to move a little more slowly in commodity import liberalization, both for political and economic reasons. The Korean government has an import quota on beef which permits 50,000 metric tons of beef imports per year. This import quota number was not simply pulled out of a hat, but is the result of careful calculations made by our government based upon domestic consumption demands for type and quantity of imported beef.

U.S. beef producers would like to see the beef quota increased if not entirely lifted. The controversy surrounding beef imports, however, obscures the fact that U.S. high-quality beef (HQB) imports have actually done quite well and continue to do so on the Korean market since the market was partially opened and a quota was put in place in July of 1988. This is reinforced by the fact that the quota assures U.S. beef exporters a potential market share that they might not otherwise have, given the competition from Australia and New Zealand which hold a price advantage over the U.S. in some types of beef exports. In 1983, when the Korean government suspended beef imports, the U.S. share of the Korean beef import market was only 1.6 percent. As of August 1989, however, the U.S. share was 28.3 percent or 11,900 metric tons of the 42,000 metric tons of total beef imports.

For several reasons, Korea has maintained a quota and moves only gradually to liberalize beef imports:

* Agricultural income in Korea derives heavily from beef production. This issue is not simply one of industrial competitiveness and survival, but one of survival for Korean farmers as a group.

* Forty-eight percent of Korea's farmers are cattle farmers owning an average 2.2 head of cattle per household. Livestock income is 13.9 percent of total farm income. And off-farm income is about 40 percent of total farm income. Clearly, Korean farmers rely heavily upon their cattle income.
* The Korean beef industry is vulnerable, poor, and small -- only one-fiftieth the size of America's -- and therefore qualified for some means of protection under a quota system. The United States has its own form of protection for the meat industry in its Meat Import Act of 1979 which requires the President to impose quotas on the import of certain meats (mainly beef) if the level is projected to exceed a certain amount.

A quota happens to be the most appropriate stage of import liberalization in the case of beef at the present time, given the size and frailty of the Korean beef industry and the level of domestic demand. But the Korean government does not consider beef a permanently exempt category in the overall scheme of agricultural import liberalization. Compared with the past, beef imports, particularly from the U.S., have come a long way. While the beef quota is in place, the Korean government is implementing a Livestock Development Plan within the framework of a comprehensive Rural Development Plan to facilitate adjustments in the agricultural sector that will ultimately promote free and fair competition.

The Korean government will allow more beef imports with expansion of domestic demand for beef. Foreign exporters are guaranteed at least a 40 percent share of the Korean beef market, and that market will continue to grow as our economy prospers and consumer income grows. The actual level of U.S. beef exports will assuredly grow along with the market. In the future with the help and understanding of the U.S., the Korean government will continue to keep U.S. beef trade interests on the agenda as it sets a course for liberalization and adjustment.

In the meantime, the Korean government is maintaining a steady and progressive agricultural import policy which will continually benefit commodity exporters by expanding commercial opportunities. We remain committed to this despite some political difficulties which have arisen over agricultural trade issues. Beef again represents the most extreme of cases, but serves to illustrate some of the political problems which the Korean government faces domestically with its market-opening efforts. The democratization of Korea has allowed the radical student opposition to shift their focus from strictly political matters to trade issues, particularly agricultural matters. Farmers received strong support from students and members of the opposition parties in their campaign against the government's resumption of beef imports. This collusion between political activists and farmers can be seen as the driving force behind the highly publicized anti-American sentiment in Korea.

Yet, within a relatively short period of time, and often under adverse conditions, Korea has maintained a steady and progressive market opening policy. Compared to other nations during similar periods of economic development, Korea is more advanced in market liberalization. With this in mind, we hope that U.S. legislators, businessmen, and exporters will bring a measure of patience to developments in this field.

Consolidated Biscuit and Pacific Rim Exporting: A Success Story

*Joseph Cristo**

Consolidated Biscuit has been a producer of packaged cookies and crackers for 27 years. We are primarily contract packers but also sell price line warehouse and distributor programs.

Our emphasis has not been in exporting. Our experience though has been a profitable one from a business standpoint and a rewarding one from a personal standpoint. Our product line was sought out by exporters who felt they could represent us in the Pacific Rim countries. We proceeded by allowing exporters to present our products.

Our export distributors had some success, but the additional exposure through the Ohio Department of Agriculture and the Mid-American Agra-Trade Council has tripled our business and allowed us the opportunity to communicate directly with buying groups on tour here in the U.S. These meetings have enabled us to forge new selling opportunities and understand more fully the needs of our customers.

As related to our products, our customers are looking for value-sized, portion packages. They avoid many additives and preservatives. Our company's direction has not been to develop export markets but our product lines more than meet the criteria exporters have put forth.

We have chosen to continue with those who represent us overseas. The exporters have done a good job and in some cases have even arranged for distribution on the local levels. Our exporters work on a F.O.B. plant price list, arrange traffic, and prepare all export papers. They represent us in five locations and have local representatives to gather information and report to us new opportunities. Our goal is to continue to be represented in this way for several years and to increase our variety mix and presence. The current system allows us this flexibility without the large cost commitment of company representation.

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